



# Belvidere Theatre

129 Nevada Street  
Central City, Colorado 80427

Historic Structure Assessment and  
Preservation Plan  
SHF Grant No. 2016-HA-005  
Deliverable #5 Final HSA  
July 2016



**Belvidere Theatre  
129 Nevada Street  
Central City, Colorado**

**HISTORIC STRUCTURE ASSESSMENT  
AND  
PRESERVATION PLAN**

Site ID No. 5GL.7.44

July 2016

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Structural Engineer: JVA, Inc.

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## **1.0 INTRODUCTION**

### ***1.1 RESEARCH BACKGROUND/PARTICIPANTS***

This historic structure assessment and preservation plan is based on a series of visits to the building during which the conditions of major components of the building were observed and their physical conditions and problems noted. The on-site observations occurred in November and December of 2015, and January 2016. Information obtained during the on-site observations is organized by major building components as follows: site, foundations, building structural system, building envelope - exterior walls, building envelope - roofing and waterproofing, building envelope - doors and windows, interior finishes, mechanical systems and electrical systems.

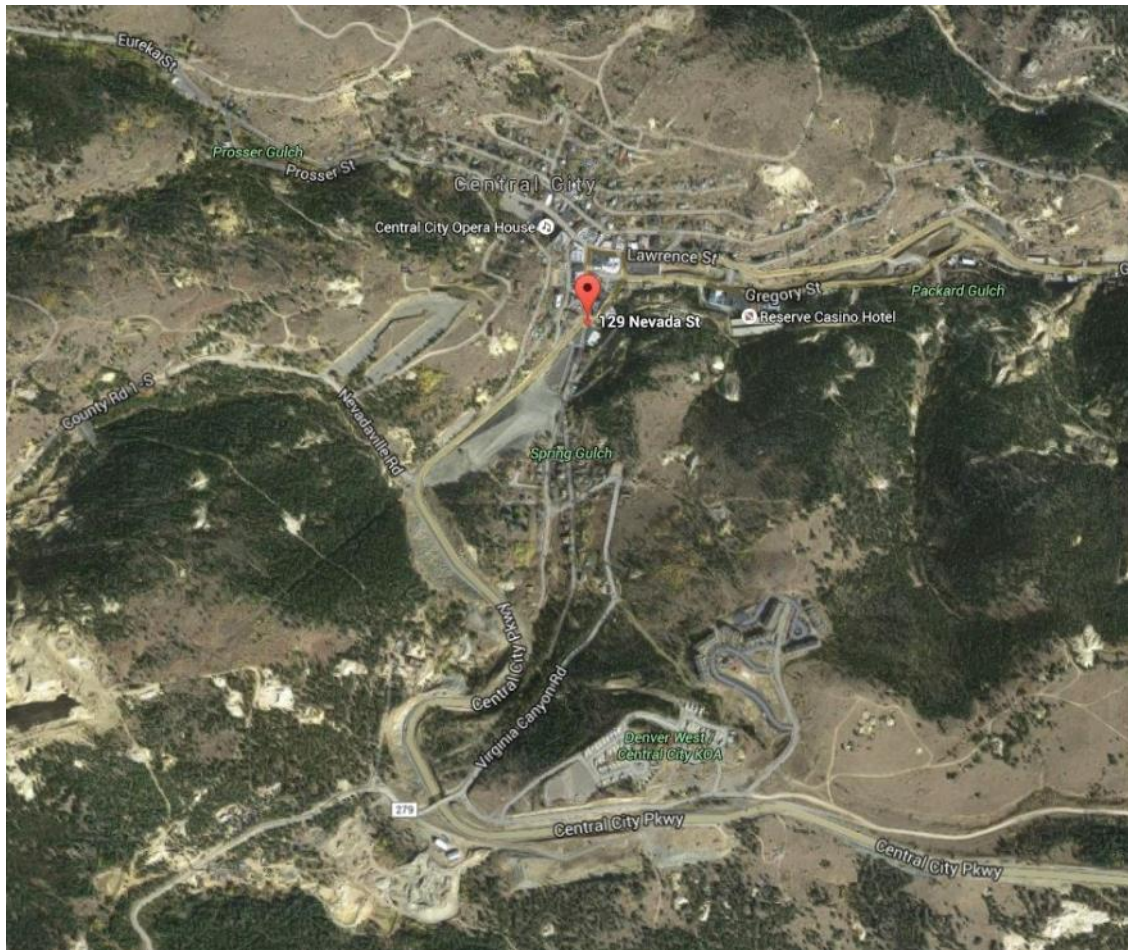
The on-site observations and development of the historic structure assessment and preservation plan were completed by Jessica Reske, AIA, LEED AP and Gerhard Petri, AIA, of Hord Coplan Macht. On-site observations and development of structural documentation and recommendations were completed by Larry Graham, PE and Christine Beckman, both of JVA, Inc. Further research and information was provided by Ray Rears, Community Development Director for Central City. Information relating to dates of construction and changes were obtained from Compass, History Colorado's On-line Cultural Resource Database. This project was paid for in part by a State Historical Fund grant from History Colorado. Copies of the original drawings of the building were not available. Copies of drawings prepared by the Mountain Design Group of Evergreen, Colorado for an unbuilt renovation project at the property were made available. These drawings were only partially accurate in reflecting the existing configuration of the building.

### ***1.2 BUILDING LOCATION***

The building is located in Central City, Colorado. Central City is located in Gilpin County, approximately 35 miles west of Denver at an elevation of 8,496 feet above sea level. Central City was developed following the discovery of gold by John Gregory in 1859 in a gulch near Central City. Within two months of this discovery, the population in the area grew to nearly 10,000. The area became the mining center in Colorado, known as the 'richest square mile on Earth.'

In 1872, the Teller House was constructed, purported to be the finest hotel west of the Mississippi River. The Belvidere Theatre was constructed in 1874, the same year in which most of the buildings in Central City were destroyed by fire. The town was rebuilt following the fire, with many of those buildings remaining in town today.

## 1.2.1 VICINITY MAP



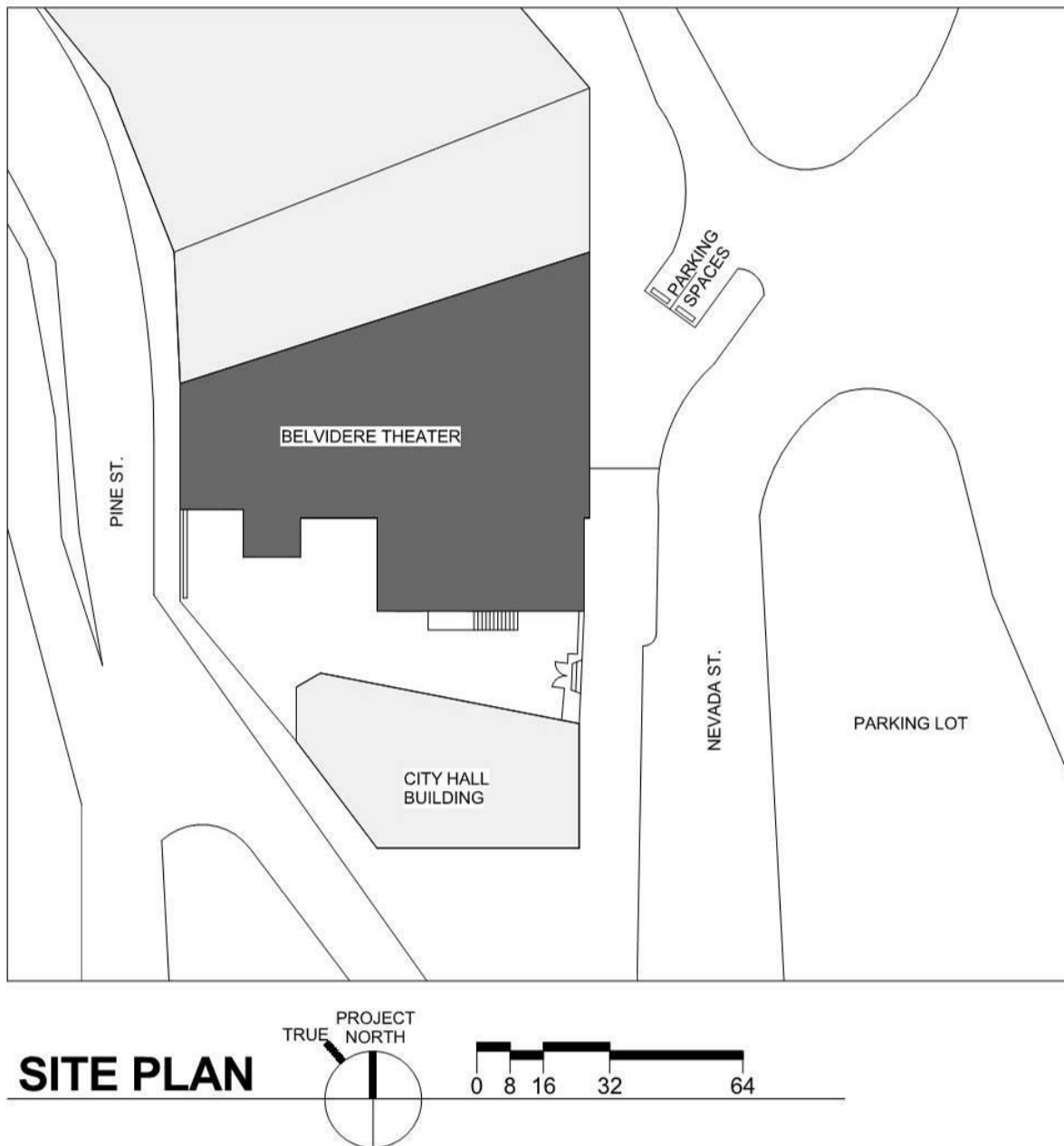
## 1.2.2 LEGAL DESCRIPTION

The legal description of the property was obtained from the Gilpin County Assessor Records. The legal description is as follows:

S: 12 T: 3S R: 73W Subd: Central City Block: 001 Lot: 019 thru 021 (PT LT 21) & IMPS



### 1.2.3 SITE PLAN



## 2.0 HISTORY AND USE

### 2.1 *ARCHITECTURAL SIGNIFICANCE AND CONSTRUCTION HISTORY*

#### 2.1.1 History

The Belvidere Theatre was constructed in 1874 to replace the Montana Theatre which was destroyed by a fire. The Theatre on the upper level of the building is the predecessor of the Central City Opera House. The lower level of the building was used at various times by the National Guard, Hubert Guards, and the local fire department.

The theatre was constructed by Senator Henry Teller and Judge Silas Hahn. Upon completion, the theatre was an instant success among citizens of and visitors to Central City. The building served as the venue for numerous local theatrical and musical performances as well as traveling shows. The success of the theatre demonstrated its shortcomings and led to the construction of the Central City Opera House in 1878. Following construction of the Opera House, the Belvidere Theatre was used as retail space by a variety of companies. In more recent years, a variety of owners attempted to rehabilitate and re-open the theatre building with varying degrees of success.

In the mid-1970s the theatre was used for filming of a movie, *The Duchess and the Dirtwater Fox*. At this time, alterations were likely made to the building to accommodate filming and as part of the set and props required for the movie (*Re: Figure 11*). In images from the movie, interior decorative painting and trim are visible.

The building was purchased by Jay Williams in 1990. It is understood that his intention was to rehabilitate and re-open the building as a theatre / commercial venture and/or casino. As part of that anticipated project, interior modifications to the building were made including establishing openings in interior bearing walls, reconfiguring stairs, and construction wood framing in anticipation of partition walls and platforms in the lower level. According to Central City records, the building was determined to be a 'hazardous building' in 1998 due to its deteriorating condition. Shortly thereafter, the kitchen section of the building, to the west of the Shoo Fly area, was demolished. Central City required the owner to reconstruct this section of the building within 180 days of demolition. This reconstruction was never completed.

In 2003 roof repairs were completed. These repairs included replacement of some areas of roofing material and over-roofing other areas. Central City has a number of letters in City records indicating multiple requests to the building owner to complete much-needed repairs to the building. Currently, the building is vacant.





*Figure 1: Overall view of the Belvidere Theatre building in the 1880s. Photo courtesy of the Denver Public Library Western History Collection.*



*Figure 2: Overall view of the Belvidere Theatre building circa 1899. Note the kitchen section of the building visible along the south elevation. Photo courtesy of the Denver Public Library Western History Collection.*

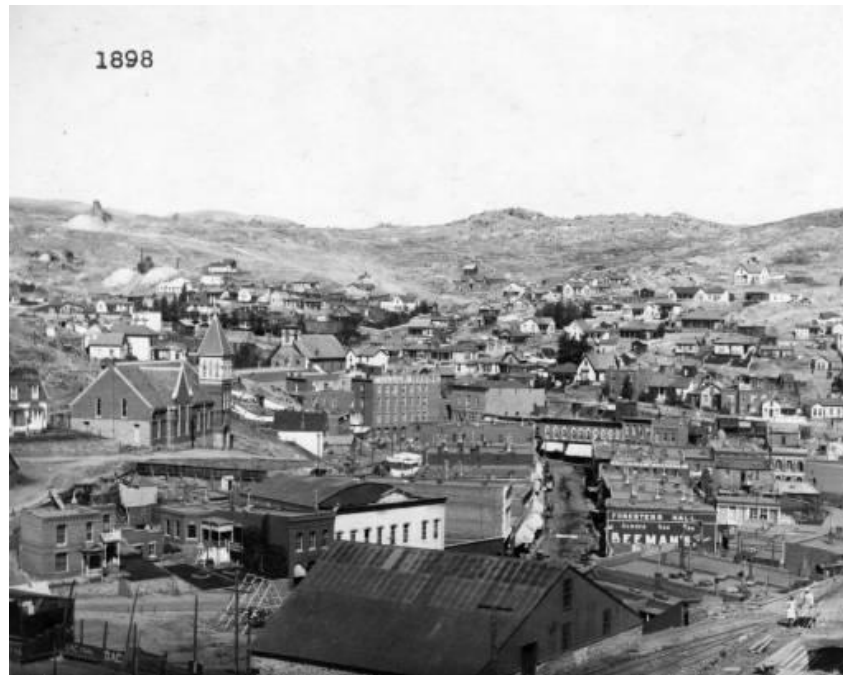


*Figure 3: Overall view of the east elevation of the Theatre section of the building in the 1890s. Photo courtesy of the Denver Public Library Western History Collection.*



*Figure 4: Overall view of the east elevation of the Theatre section of the building circa 1892-1900. Photo courtesy of the Denver Public Library Western History Collection.*





*Figure 5: Overall photo of Central City in 1898. Note the Belvidere Theatre building in the lower section of the photo. Photo courtesy of the Denver Public Library Western History Collection.*



*Figure 6: Overall view of the east elevation of the Belvidere Theatre building circa 1900. Photo courtesy of the Denver Public Library Western History Collection.*



*Figure 7: Overall view of the east elevation of the Belvidere Theatre circa 1951. Photo courtesy of the Denver Public Library Western History Collection.*

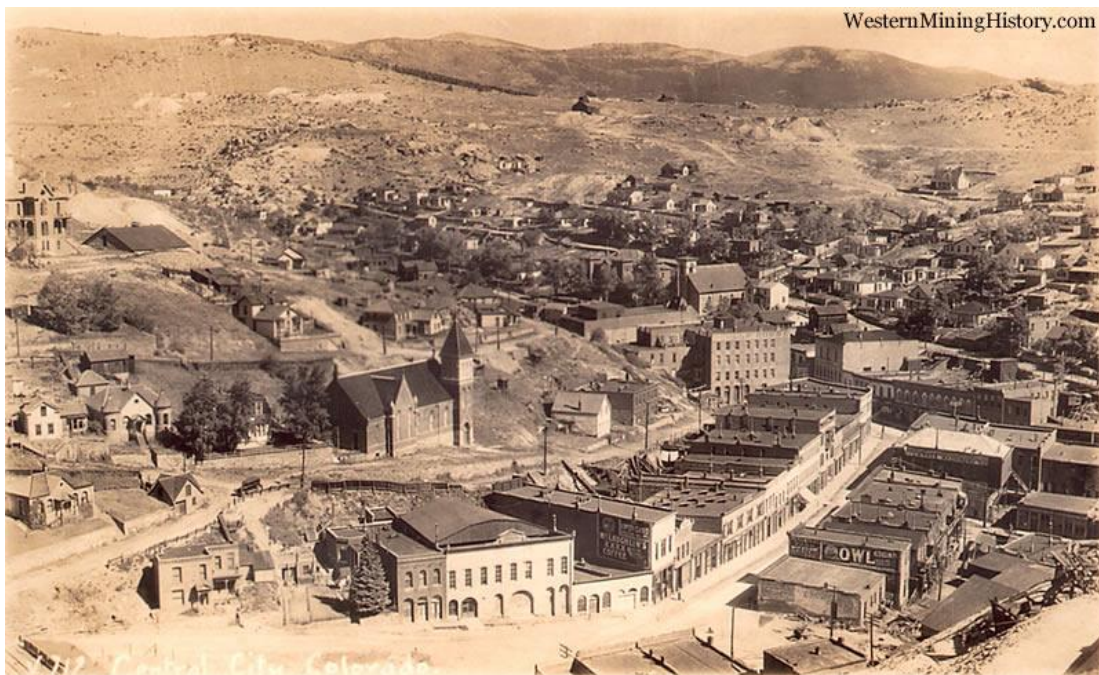


*Figure 8: Overall view of the Belvidere Theatre building circa 1954. Photo courtesy of the Denver Public Library Western History Collection.*





*Figure 9: Overall view of the east elevation of the Belvidere Theatre building circa 1968. Photo courtesy of the Denver Public Library Western History Collection.*



*Figure 10: Undated photo of Central City. Note the Belvidere Theatre building in the lower middle section of the photo. Photo courtesy of the Denver Public Library Western History Collection.*



*Figure 11: Interior of the Belvidere Theatre as seen in the movie 'The Duchess and the Dirtwater Fox.'*

### 2.1.2 Architectural Description

The Belvidere Theatre building is at the end of a row of buildings which share party walls (*Re: Figure 12*). The building is irregular in plan, with the north wall of the building angled and the building being wider at the east end than at the west end. The building includes two stories and a mezzanine level. The lower level is accessed via entrances approximately at grade. The upper level includes the main floor of the theatre space as well as the Shoo Fly bar area. The mezzanine level is located within the main theatre space.

The exterior walls of the building are constructed of brick laid in running bond with no visible header courses. On the exterior, the brick has been painted. On the interior, the brick is concealed by painted plaster. The front elevation of the building is the east elevation. The east elevation has three bays in the Shoo Fly section of the building (the south end of the building) and seven bays in the theatre section of the building (the north end of the building) which are defined by window and door openings. The north elevation immediately abuts the adjacent building. On the north elevation there are two door openings above the roof of the adjacent building which provide access to the fire escape. The west elevation faces Pine Street. The west elevation does not have any window and door openings as it is the upper section of the theatre fly space. The south elevation of the building has been modified as the kitchen section of the building was demolished.

The building has flat roofs at the east end of the theatre space, at the fly space at the west end of the theatre, and along the south sections of the building. The main theatre space has a pitched roof, which is not original. Prior to construction of the pitched roof, the roof on the theatre was flat. This flat roof is still extant under the pitched roof in the attic space. The roofs do not have projecting eaves. The flat sections of roof have parapet walls. Along the east elevation of the building there is a wood cornice.

The original double hung wood windows are extant along the east elevation of the theatre section of the building. One window opening was infilled with brick masonry at an unknown date. These windows are arched top, double hung four over four wood windows. Each window opening has a painted masonry sill and painted arch at the head of the opening. The upper section of the Shoo Fly section of the building has three arch top, double hung wood windows. These windows are in masonry openings, also with painted sills and arched headers. On the south elevation of the Shoo Fly section of the building, there are two bay windows which are not original. The date of installation of these bay windows is unknown.

On the lower level, the Shoo Fly and the theatre sections of the building have arched window and door openings (*Re: Figure 13*). The main entrance is in the theatre section of the building, at the location of the largest arched opening. This entrance has been modified from its original configuration, as seen in historic photos. Secondary entrances to the building include additional entrances along the east elevation as well as an entrance to the Shoo Fly on the south elevation. Emergency exits onto the fire escape are present on the north elevation.

The entrances along the east elevation are one to two steps above the adjacent grade of the sidewalk. The south elevation entrance to the Shoo Fly is located up a set of stairs from the courtyard.

On the interior, the upper level of the building includes the main theatre space, which has a mezzanine, and the Shoo Fly area. The mezzanine level was installed at an unknown date. The



floor of this level runs across the window openings, indicating that it was not part of the original design of the building. The lower level of the building includes one large room below the Shoo Fly area and a partially renovated area below the main theatre space on the upper level of the building. In the area below the main theatre space, there are several sections of wood wall framing as well as masonry bearing walls.



*Figure 12: Overall view of the Belvidere Theatre building from the southeast.*



*Figure 13: Arched openings on the lower level of the Shoo Fly section of the building.*

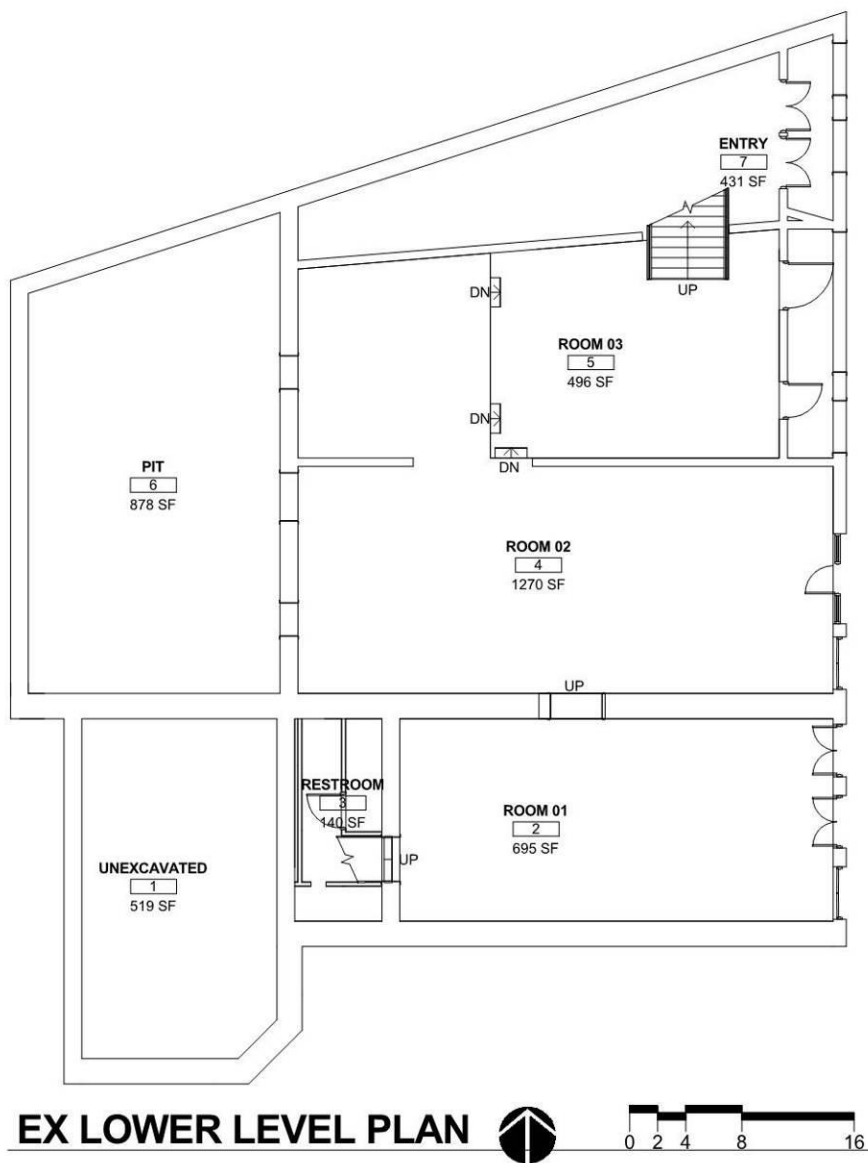


### **2.1.3 Preservation Background**

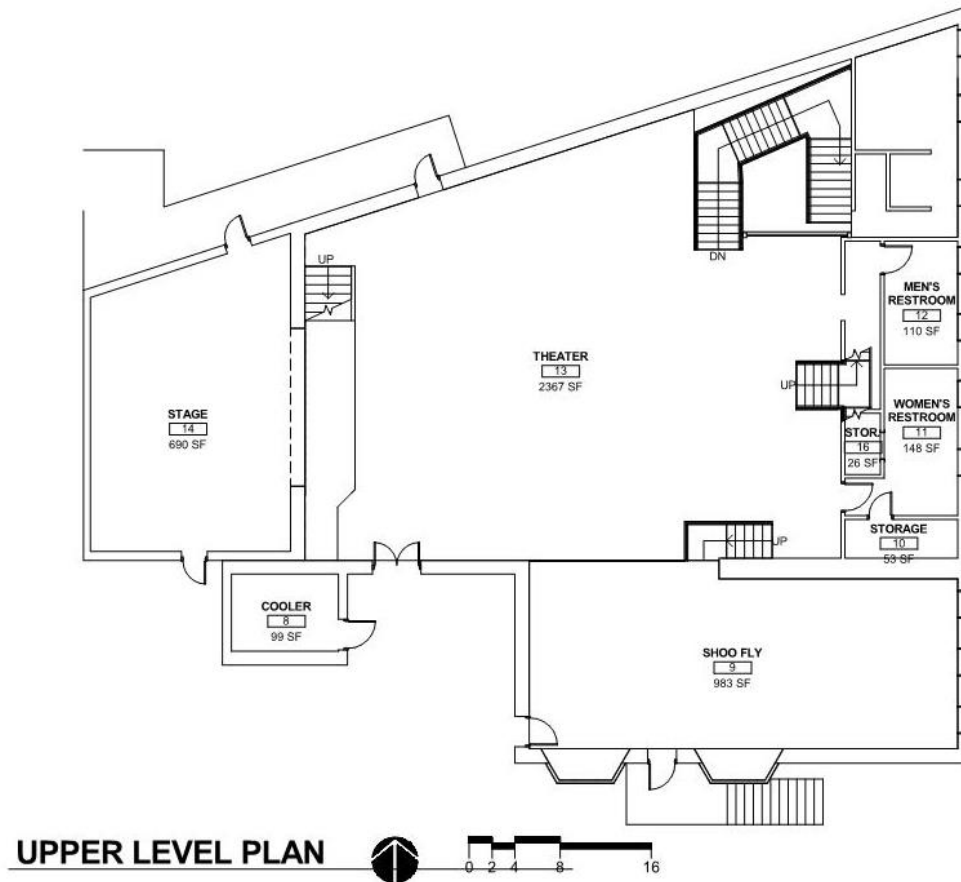
The Belvidere Theatre building is a contributing building in the Central City – Black Hawk Historic District. The District was designated a National Historic Landmark District in 1961 and was added to the State and National Register of Historic Places in 1966. The building is significant for its association with significant persons and contribution to the significance of the historic district in which it is located. A period of significance for the building was not included in the National Register Nomination.

## 2.2 EXISTING FLOOR PLANS

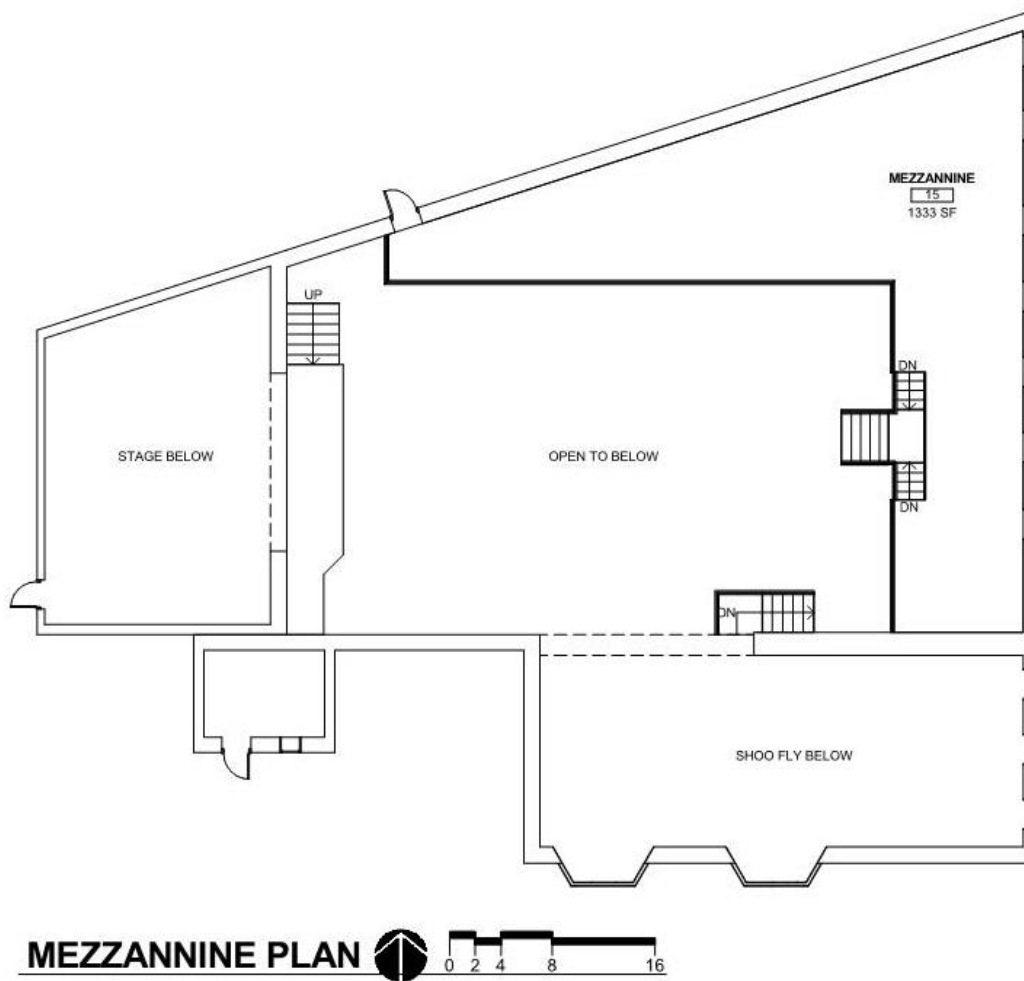
### 2.2.1 LOWER LEVEL PLAN



## 2.2.2 UPPER LEVEL PLAN



### 2.2.3 MEZZANINE LEVEL PLAN





## ***2.3 PROPOSED USE***

The Belvidere Theatre building is currently vacant. The proposed use for the building is as a public venue for stage productions and community events and gatherings. The proposed use is appropriate for the building.

The proposed use for the building would indicate that the rehabilitation standards are most applicable. The Secretary of the Interior's Standards for the Rehabilitation of Historic Buildings are as follows:

- A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.
- The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.
- Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.
- Changes to a property that have acquired historic significance in their own right will be retained and preserved.
- Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.
- Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.
- Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.
- Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.
- New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.
- New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment will be unimpaired.

### 3.0 STRUCTURE CONDITION ASSESSMENT

This building condition assessment and treatment recommendations are based on a number of visits to the building during which the conditions of major components of the building were reviewed and their physical conditions and problems noted. Information obtained during these observations is organized by major building components as follows: site work, foundations, building structural system, building envelope - exterior walls, building envelope - roofing and waterproofing, interior finishes, mechanical systems, and electrical systems.

#### Definitions

This building condition assessment makes use of terms concerning the condition of building components which are defined as follows.

Good Condition: An element, component or system is evaluated in good condition when it is intact, structurally sound or functionally operational, and performing its intended purpose. There are few or no cosmetic defects. The element needs no specific repair and requires only minor or routine maintenance.

Fair Condition: An element, component or system is evaluated in fair condition when there are signs of wear, fatigue, or deterioration exceeding nominal expectations, though the element is generally structurally sound or functionally operational and performing its intended purpose. There may be failure of a sub-component of the element or system. Replacement of up to 25 percent of the element or replacement of defective subcomponents may be necessary.

Poor Condition: An element, component, or system is evaluated in poor condition when it is no longer performing its intended purpose. Deterioration or damage affects more than 25 percent of the element and simple repairs cannot be justified or are not expected to be effective. The element may show signs of imminent failure or breakdown. Major repair or replacement may be required.

## **3.1 SITE**

### **3.1.1 Associated Landscape Features**

To the east, the site is bordered by Nevada Street, just off of Main Street (*Re: Figure 14 and Figure 15*). Along Nevada Street there is a concrete curb. Between the curb and the east elevation of the building there is a sidewalk paved with red brick pavers (*Re: Figure 16*). There is a section of stone pavers at the main entrance to the building. The red brick pavers end just north of the joint between the two sections of the building. To the south of the pavers the sidewalk is paved with asphalt (*Re: Figure 17*). At the southeast corner of the building, a strip of asphalt pavement continues along the masonry retaining wall. To the east of the strip of asphalt, the sidewalk is paved with concrete. Along the street, there is a section of red colored concrete. At the stair access the courtyard to the south of the building, the entire width of the sidewalk is concrete. Along the street there are lamp posts and street signs. There is an electrical utility access panel in the sidewalk along the east side of the building.

To the north, the site is bordered by the adjacent building. A fire escape is mounted to the north wall of the theatre building to provide egress from the mezzanine level and the north side of the upper level of the building in the theatre (*Re: Figure 18*). The fire escape is above the roof of the adjacent building and connects with an exterior stairway which provides access to Pine Street at the west end of the site.

To the west, the site is bordered by Pine Street. Between the street and the theatre building is a concrete sidewalk (*Re: Figure 19*). To the north and south of the building there is a concrete retaining wall with a metal railing along the east side of the sidewalk. The west end of the fly space is immediately adjacent to the concrete sidewalk.

To the south, the site is bordered by the City Hall for Central City. Between City Hall and the Theatre is an outdoor courtyard space (*Re: Figure 20*). Along the building there is construction debris in the courtyard, with the highest concentration of debris at the west end of the site (*Re: Figure 21*). The site has a steep slope from the high west end of the site to the east end of the site. At the southeast corner of the building a dry stacked stone masonry retaining wall extends south. A pipe metal railing with wire mesh extends south from the southeast corner of the building atop the masonry retaining wall (*Re: Figure 22*). The railing turns to the west. A smaller, modern fence is connected to the pipe metal fence. The modern fence extends south to the north wall of the City Hall building. Midway between the ends of this fence there is a gate which provides access into the courtyard area. Access to this gate from the city maintained sidewalk is provided via four stairs constructed of concrete masonry units with cast stone treads (*Re: Figure 23*). To either side of the stairs are planters constructed of dry-set interlocking concrete masonry units (*Re: Figure 24 and Figure 25*). The CMU walls are topped with cast stone pavers.

#### Condition:

The site to the east of the building is in fair to poor condition. The concrete pavement along the curb is in poor condition with several areas of cracking and spalling (*Re: Figure 17*). Where the asphalt and concrete meet, the joints are separating. The joint between the pavement and the building is open in several sections along this elevation.

To the north, the theatre is immediately adjacent to the neighboring building. The fire escape mounted to the north wall of the theatre is in fair condition. The metal components are exhibiting rust and deterioration (*Re: Figure 18*).

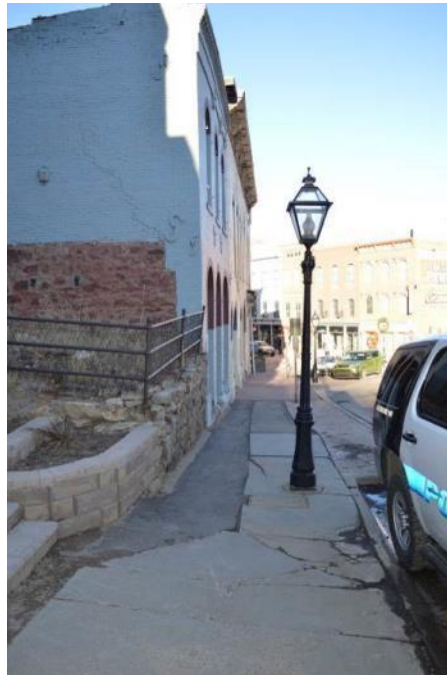
To the west, the site is in fair condition. Along this elevation, water does not drain away from the building due to a lack of gutter and downspout. In addition, snow was observed drifted and piled next to the exterior wall of the building. The joint between the building and the pavement is open in sections.

The site to the south of the building is in fair condition. The site is overgrown, primarily with native vegetation. The site wall along the sidewalk extending south from the southeast corner of the building is in poor condition. The wall is bulging out and out-of-plane movement is notable. The fence atop the wall is leaning outward, which is a result of the deterioration of the masonry wall. The CMU walls and stairs along the east side of the courtyard are in good condition.

#### Recommendations:

- Rehabilitate metal fire escape to the north of the theatre. (Serious) Rehabilitation should include:
  - Remove loose material
  - Replace missing and severely damaged metal components
  - Coat areas of rust with rust-converting primer
  - Prep, prime, and paint
- Seal building to pavement joints along the east and west elevations. (Critical)
- Replace sidewalk along the east elevation of the building. Where extant, retain original materials. (Serious)
- Follow recommendations in Section 3.4.4 Drainage System regarding the roof drainage.
- Remove debris from the site to the south of the building. (Serious)
- Rehabilitate masonry retaining wall extending south from the southeast corner of the building. (Critical) Rehabilitation should include:
  - Deconstruction and reconstruction of sections of the wall which are leaning, rotating, and/or bulging.
  - Installation of vertical ties to reinforce the masonry wall.
  - Replacement of missing and severely deteriorated masonry.
- Regrade site as necessary to facilitate proper drainage away from the south elevation of the building. (Critical)





*Figure 14: Overall view of concrete and asphalt paved sections of sidewalk to the southeast of the building.*



*Figure 15: View along the east elevation of the theatre, facing south.*



*Figure 16: Overall view along east elevation of the building, facing north. Note red brick pavers along the front of the theatre section of the building.*



*Figure 17: Detail view of various pavement types to the east of the theatre building.*



*Figure 18: North elevation of the theatre. Note the fire escape mounted on the north wall of the theatre.*



*Figure 19: Overall view along the west elevation of the theatre building. Note the fly space section of the building to the right in the photo and Pine Street to the left.*





*Figure 20: Overall view of courtyard to the south of the theatre.*



*Figure 21: Overall view of the site to the south of the building. Note construction debris near the building in the lower left corner of the photo.*



*Figure 22: Detail view of fence atop the masonry retaining wall extending south from the southeast corner of the building.*



*Figure 23: Stairs providing access to the courtyard from the sidewalk along Nevada Street.*





*Figure 24: Planter and fence to the south of the stairs accessing the courtyard.*



*Figure 25: Planter, fence, and retaining wall to the north of the stairs accessing the courtyard.*





*Figure 26: Overall view of retaining wall to the southeast of the building. Note out-of-plane movement and bulging in the wall.*

### 3.1.2 Parking

Street parking is provided along Nevada Street and Main Street. There are two parking spaces in close proximity to the northwest corner of the building. Currently, parking is also available in a parking lot across Nevada Street. However, this site may be developed in the future, limiting parking for the Belvidere Theatre.

#### Condition:

The existing parking is in good condition. Once a final use for the building is established and a rehabilitation project to make the building occupiable is planned, zoning code regulations should be reviewed for parking requirements related to the occupancy of the building.

#### Recommendations:

- There are no recommendations for parking at this time. When a final use for the building is established and a rehabilitation project to make the building occupiable is planned, zoning code regulations should be reviewed for parking requirements related to the occupancy of the building.

### 3.1.3 Archeology

No archeological surveys have been done on the building. Discovery of artifacts on site is possible and archaeological monitoring should be included in any ground disturbing work on site.

#### Recommendations:

- Follow the archeological guidelines required by the Office of Archaeology and Historic Preservation for all construction activities that disturb the ground on the site. (Routine)

## 3.2 BUILDING STRUCTURAL SYSTEM

### 3.2.1 General Structural System

The Belvidere Theatre, as it stands today, was primarily constructed in three eras: a building originally known as the Shoo Fly Saloon constructed in the mid-1860s, the Belvidere Theatre constructed in the late 1870s as a horizontal addition to the rectangular Shoo Fly structure, and the concrete walled back stage and pit addition to the north (*Re: Figure 27*). The buildings' interior spaces are connected through openings created in the dividing walls. An attempt to repurpose the building into a casino in the late 20<sup>th</sup> century was started and subsequently abandoned. Several modifications and alteration to the wood floor framing were partially completed during this abandoned renovation program. Overall, the entire building has an irregular footprint and interior configuration as the property is located at the oblique corner of Nevada Street (also known as Casino Parkway) and Main Street in downtown Central City.

The Shoo Fly building and Belvidere Theatre face Nevada Street (also known as Casino Parkway). Both buildings are two-stories tall and are generally constructed of stone and brick masonry bearing walls that support wood floor and roof framing.

#### Abbreviated structural history:

- The Shoo Fly building was constructed around 1865.
- The first Belvidere Theatre was constructed adjacent to the Shoo Fly building in the early 1870s. This first theatre burned down with the major fires of 1873 and 1874.
- The Belvidere Theatre was constructed in the same location in the late 1870s, but with a higher roof line than its predecessor. The new construction included a large bay with an arched opening for the Central City Fire Department's equipment.
- Small brick additions, such as a kitchen off the back of the Shoo Fly, were added and later demolished.
- A large concrete walled structure enclosing a stage was added at the back of the theatre in the latter half of the 20<sup>th</sup> century.
- In the 1990s, the interior wood floor framing was modified and augmented during an abandoned renovation project that aimed to convert the building to a casino.

The lateral force resisting system of the Belvidere Theatre consists of the wood floor and roof diaphragms tying into the brick and stone masonry walls. The masonry walls function as both the gravity support system and lateral system for the structures.

Based on visual inspection of the wood members found throughout the Belvidere Theatre, the characteristics of the wood indicate that the wood is of the Pine family. Therefore, the Spruce-pine-fir species combination was used for analysis. The members are generally free of defects such as knots and slope of grain so the Select Structural grade was used for analysis.

The Code required live load for public spaces, such as a theater or bar as found in the Belvidere Theatre, is 100 pounds per square foot (psf). Since it is understood that this building would continue to be used for public functions, all members were analyzed using a live load of 100 psf. The Code and jurisdiction required snow load for the Belvidere Theatre is 75 psf, while the 3-second gust required wind load is 130 miles per hour.

#### Condition:

The structural systems of the Belvidere Theatre are generally in poor condition. Although what remains of the structure is generally adequately proportioned and assembled to meet historic and proposed uses, deferred maintenance and the lack of heating in the building has caused many of the elements to fall into disrepair. A number of condition problems exist due to moisture infiltration either through the ground as rising damp or openings in the roof.

The existing lateral force resisting system of the Shoo Fly and Theatre consists primarily of unreinforced masonry (URM) shear walls. URM walls lack ductility and will brittlely fracture when overloaded and generally perform poorly during out-of-plane seismic loading. A full structural analysis of the three buildings' lateral force resisting systems is beyond the scope of this report. This type of analysis will require material studies of various material properties for this analysis. However, the findings of such an analysis will likely conclude that the demand to capacity ratios for several of the URM walls will be met or exceeded under design seismic demands and possibly under design wind loads in their current deteriorated state. Several large openings were introduced into the original masonry walls and these also reduce the lateral load capacity of the three conjoined buildings.

Therefore, the need to introduce some new structural elements such as shear walls or moment frames that will strengthen the deteriorated and modified URM walls should be anticipated in the building rehabilitation. This intervention would be in addition to repairing the existing cracks and deteriorated mortar joints.

#### Recommendations (Lateral Force Resisting System):

- The likely candidate location for a new lateral force resisting (LFRS) element (such as a new shear wall or moment frame) is the front façade of the theatre. Each type of element has various pros and cons that will need to be considered prior to selecting a strengthening approach. The least costly LFRS element would be a new plywood shear wall at the inside face of the existing exterior masonry wall. This approach entails furring out the interior walls of the theatre front façade with a new 2x4 wall (either wood studs or light gage metal studs) sheathed with plywood or oriented strand board (OSB). This is a reversible structural intervention and would aesthetically impact the visible depth of the existing façade openings. Another approach would be to install new steel moment frames near to the exterior masonry wall. The moment frames would consist of new horizontal steel beams and vertical steel columns attached to the existing wood floor diaphragms at the second floor and roof levels. These frames are also a reversible intervention and will also somewhat encroach on interior

space. The columns would be located between windows and new soffits would be created at the beam locations. Most likely, this approach will be significantly more expensive than the shear wall approach due to construction logistics including inserting and integrating the heavy steel frame elements into the building and welding the frames together. (Serious)

- The large openings added to the Shoo Fly's north wall are framed with concrete posts and beams (*Re: Figure 28*). The reinforcement of these concrete elements is unknown. They may have adequate reinforcing to act as moment frames or they may require strengthening to adequately resist in-plane lateral loads in the north wall. (Serious)
- The existing, modern-era, reinforced concrete stage area addition may be able to act as an anchor/buttress for the weaker URM portions of the structure. Further investigation of the size and spacing of reinforcing steel in these walls will be needed to develop a better understanding of their structural capacity. (Serious)
- Further investigation of the construction of the rubble stone walls below the stage is recommended if a lateral strengthening scheme uses the stage walls to resist lateral demands from the URM portions of the structure. (Serious)
- There are clauses in Chapter 34 of the International Building Code that could be explored during a code study that may exempt the building from a full seismic upgrade during the proposed renovation. However, given the deteriorated structural condition of the existing URM walls and the fact that the proposed primary function for the building is public assembly, it would be prudent to explore an overall strengthening scheme that achieves code compliance to at least some percentage of new buildings. (Serious)
- Regardless of what overall structural strengthening program is considered or enacted, deteriorated building appendages such as the parapets and cornices would be considered unsafe during seismic/high wind events and should be structurally strengthened. This will likely entail structural reinforcement of the URM parapets and cornice as well as connecting the existing walls to the existing floor and roof diaphragms with additional new tie rods. (Critical)



*Figure 27: The Shoo Fly is located to the south (the blue building to the left of the image), the Belvidere Theatre is located to the north (the yellow building to the right of the image), and the more modern stage addition behind and to the west (the taller brown building behind the Shoo Fly and the Belvidere Theatre)*



*Figure 28: Concealed concrete-framed openings in the wall between the bar and the theater*

### 3.2.2 Foundation Systems

#### Shoo Fly

The perimeter foundations for the load bearing stone masonry walls of the Shoo Fly portion of the building are not exposed (*Re: Figure 29*). They are presumed to be a below-grade continuation of the stone ashlar walls as a stem wall. The stem foundation wall may bear upon a wider rubble stone footing or they may bear directly upon the sloped stone ledge (bedrock) present at the site. The stone ledge is visible in the pit area below the stage floor framing (*Re: Figure 30*).

There is a 2 inch thick wood board or nailer located in the walls approximately 2 stone courses above grade (*Re: Figure 31*). For the purpose of this report discussion we have defined the foundation wall as the portion of the wall below the wooden plate. The portions of the wall above the plate are designated as walls for discussion and are discussed in the exterior wall section of the report.

The embedded wood plate at the top of the foundation wall is decaying and compressing under the weight of the stone. The compression is greater along the north face of the wall than the south face and results in the northward lean observed in the wall above. The vertical cracking visible in the wall above appears to be the result of the wall lean and not differential settlement of the perimeter foundation wall.

New wood posts introduced into the Shoo Fly first floor during the abandoned casino renovation have concrete spread footings that bear upon the exposed earth floor (*Re: Figure 32*). These modern footings are presumed to have a minimum amount of steel reinforcing bars present, but this should be verified if these footings are to be retained in the rehabilitation. The height of the new concrete footings appears to generally match the beam pockets in the stone walls for the now removed elevated wood first floor.

#### Theatre

The perimeter foundations for the load bearing brick walls of the Theatre were not exposed for inspection. They are likely a below grade continuation of the brick walls as brick stem walls supported by a stone rubble footings. It is also possible that the walls bear directly upon the sloping bedrock that underlies the building.

#### Stage and Pit

The stage perimeter cast-in-place (CIP) reinforced concrete walls presumably are cast directly upon the sloping rock face located at the rear of the building site. The bearing condition of this wall was not readily accessible during the observation visits, but there were no visible signs of settlement of these walls that would indicate they are founded improperly.

The perimeter concrete masonry unit (CMU) and CIP concrete walls of the pit area bear upon a short rubble stone wall that is founded on the exposed sloping stone ledge. The interior wood framing for the stage floor has posts and beams that bear on the sloping stone wall with a variety of bearing conditions (*Re: Figure 33*).

#### Kitchen

The foundation of the removed kitchen addition appears to have been stone similar to the Shoo Fly construction. There may be remnants of this stone foundation wall located below grade around the



perimeter of the no longer extant addition.

#### Condition:

##### Shoo Fly

The below grade foundation stone and mortar were concealed. However, the above grade masonry at exposed interior faces near grade exhibit erosion of the mortar joints to a depth of approximately 3 to 4 inches. It is likely that this is primarily the result of rising damp. The deterioration may have been exacerbated by moisture from roof leaks that were observed during the field work for this report. Since the building is unheated, the masonry assemblies are also subjected to freeze-thaw cycles. It is likely that portions of the walls below grade also have deteriorating mortar joints.

The decaying wood board at the top of the foundation portion of the masonry wall is decaying and crushing resulting in the leaning walls above. The condition of the walls is discussed further in the exterior wall construction section below.

##### Theatre

The brick in the below grade portion of the masonry bearing walls is concealed, however the above grade masonry is in fair condition with localized areas in poor condition. The brick units are generally intact but some units have spalled. It is likely that this deterioration is the result of rising damp, but it may have been exacerbated by moisture from roof leaks wetting the wall base (*Re: Figure 34 & Figure 35*). It is likely that portions of the walls below grade also have deteriorating mortar joints and localized pockets of eroding brick.

##### Stage and Pit

The stone rubble walls are in good condition at this location and are performing well resisting gravity loads (*Re: Figure 36*). These walls appear to have been subjected to less weathering than other areas of the building and it is also newer.

The concrete stage walls likely bear directly upon the bedrock present at the rear of the site. We are not aware of a full geotechnical study for this site; however the stone ledge likely has adequate capacity to support the concrete stage walls above. No signs of settlement or distress were noted in the concrete stage walls indicating that they are properly formed on the native stone.

##### Kitchen

The presence and or condition of the abandoned kitchen foundations is unknown as they were not accessible during the observation visits.

#### Recommendations:

- Install a perimeter drain around the exposed faces of the building, add hardscape, or at a minimum provide positive grading to drain water away from the foundation. (Serious)
- Installing exterior-side waterproofing on the exterior masonry stem walls where accessible around the building perimeter is a treatment that could limit moisture entering the foundation walls. At the interior face of the masonry stem, a continuous metal flashing could be installed in a sawcut reglet near the base of the wall to act as a capillary break. (Serious)
- Further investigation should be performed regarding the walls of the Shoo Fly. The study purposed would be to develop a clear treatment for the leaning masonry walls that are founded on the decaying wood plate at the top of the foundation walls. Exploratory

openings will be required to determine the embedment depth of the wood element. It is very possible that the wood extends through the full width of the wall. Ultimately this decaying wood should be removed in sections and replaced with new mortar or grout that provides adequate support for the bearing walls above. There likely is no practical method to reverse the lean in the walls above the foundation without further damaging the leaning walls.

(Critical)

- A likely repair methodology for the embedded decaying board would include temporary lateral bracing of the wall; removing alternating 2 to 3 foot lengths of the decayed wood from one side of the wall; installing new grout; and then repeating this procedure on the other side of the wall. The remaining alternating sections of wood would then be removed from each face of the wall in a similar manner. Because some additional shifting and cracking of the brick could occur during this process, all repointing crack repairs should occur at the end of this process. (Critical)
- Repair the roof in the Shoo Fly to stop leaks and retard the freeze-thaw deterioration. (Critical)
- Investigate the construction of the foundation walls below the stage and pit to determine if the foundations system can be used in combination with the CIP walls to resist the building's lateral demands and in return relieve lateral demands on the URM portions of the structure. (Serious)
- Determine if the foundations for the kitchen are still in place. If so, the original footings may be incorporated into any new structure that may need to be added in this location, however if they are in poor condition or missing, new foundations will be required. (Minor)
- Reconstruct the outer wythe of spalling brick at the Theatre. (Minor)



*Figure 29: Southern lower level masonry wall in the Shoo Fly portion of the Building. Note that the foundations were not exposed.*



*Figure 30: Stone ledge under the pit portion of the building*



*Figure 31: 2 inch thick wood plate embedded in the base of the masonry walls of the Shoo Fly*





*Figure 32: Added wood posts in the Shoo Fly at the lower level on concrete footings*



*Figure 33: Interior stage floor framing bear on the sloping stone wall with a variety of bearing conditions*



*Figure 34: Deterioration at the bottom of the brick wall between Room 02 and Room 03 due to rising damp*



*Figure 35: Water entering through a hole in the roof of the Shoo Fly as seen in Room 01 of the lower level*





*Figure 36: The stone rubble wall below the stage and pit are in good condition*

### 3.2.3 Floor and Ceiling Structural Systems

Although no longer extant throughout most of the building, the lower level of the entire building was once framed with 2 inch by 10 inch joists spaced at 16 inches on center as evidenced by the joist pockets still visible along the bottom of the masonry walls (*Re: Figure 37*). These joists spanned about 20 feet in the north-south direction throughout the entire building. Embedded in the wall at the base of the joist pockets is a 2x6 plate on which the joists used to bear (*Re: Figure 31*). There is no evidence of an intermediate bearing line or of the type of decking that sheathed the joists. Now the floors are composed of a combination of exposed earth, loose concrete pavers and concrete slab on grade. There does not appear to be any vapor barrier below the slab on grade or pavers.

#### Shoo Fly

The framing of the lower level floors varies throughout the building complex. In the Shoo Fly portion of the building, the floor is framed with 2 inch joists spaced at 16 inches on center and which range in depth between 11 ½ inches and 12 inches. Some of the joists have been sistered with laminated veneer lumber (*Re: Figure 38*). This work most likely occurred during the late 20<sup>th</sup> century during the abandoned casino renovations. The joists bear on a ledge atop the stone masonry walls of the building where they transition to brick masonry. Two rows of x-bridging brace the joists at the third points of the span. The joists are sheathed with two layers of 1 inch thick tongue and groove boards laid parallel to each other (*Re: Figure 39*). Due to the markings on the bottom of the original joists, it appears that that a plaster and lath ceiling was directly attached to the bottom face of the floor joists.

The only ceiling joists accessible at the time of the observation visit were those that once supported the ceiling in the bar of the Shoo Fly. Here 2x12 ceiling joists span between the brick masonry walls into which they are pocketed. Where an opening was cut into the original brick masonry wall between the Shoo Fly and the Theatre, a concrete frame supports the joists on a steel angle ledger



with blocking between the joists (*Re: Figure 28 & Figure 40*). Two rows of 2x2 x-bridging laterally brace the ceilings joists at the third points of the span.

### Theatre

In the Theatre, the main level 2x10 joists span in the east-west direction between the exterior walls and interior brick demising walls where the members lap. At the mid-span, some of the joists are supported by 8x8 solid sawn wood girders that run perpendicular to the joists between a series of trussed wooden beams (*Re: Figure 41*). These trussed beams consist of four 2x10 members ganged together with wood struts supported by a metal tension tie rod 7/8 inch in diameter (*Re: Figure 42*). The trussed beams span between the exterior and demising walls of Room 02 and Room 03. Due to the skewed axis of the building, the plied beams are offset from one another in plan between Room 02 and Room 03. Like in the Shoo Fly, two rows of x-bridging brace the joists at the third points of the span. Along the wall that separates the Entry from Room 03, portions of the brick wall that support the plied beams have been replaced with laminated veneer lumber beams supported by built up lumber posts. The wall openings allow for a new stair assembly added in the late 20<sup>th</sup> century to reach the upper level. As part of the recent incomplete casino renovation, an additional wood framed bearing line was added just a foot north of the north wall of the Shoo Fly to transfer the load of the main level of the theatre to the ground (*Re: Figure 43*). Additionally, other non-structural elements such as furring walls appear to have been added during the casino renovation which was never completed. Based on the markings left behind, it seems that a plaster and lath ceiling was once directly attached to the bottom of the floor joists.

In the Theatre, the mezzanine is built of 2x8 joists supported by six-ply 2x10 beams (*Re: Figure 44*). The plied beams extend out from the north wall and at the southern end they are hung from 1 3/4 inch diameter steel rods attached to the roof trusses above (*Re: Figure 45*). The rods are encased in built up column wraps.

### Stage and Pit

The stage is generally framed as designed in the 1999 Stage Framing Plan and is approximately 3 1/2 feet above the main floor elevation of the Theatre. Pre-engineered wood I-joists span in the east-west direction between an LVL ledger attached to the west wall of the Stage building to a series of 8 inch concrete curbs. In the middle third of the wall between the Stage building and the Theatre, the I-joists extend roughly 12 feet into the Theatre and are supported by two bearing lines. At the opening in the stone masonry wall, a triple-ply 14 inch laminated veneer lumber beam spans over the opening and supports the joists (*Re: Figure 46*). Six feet out from the west masonry wall of the Theatre, another bearing line is provided by a mixture of a 2x6 stud wall and a triple ply 14 inch laminated veneer lumber beam.

### Condition:

The floor framing is generally in fair condition. There are however some isolated areas of framing in poor condition requiring repair. The most widespread issue throughout the Belvidere Theatre is the joist ends decaying in the masonry pockets (*Re: Figure 47*). This form of deterioration is common because the masonry pockets trap moisture against the wood members which increase the propensity of wood decay and deterioration.

Throughout the building, the joists are adequately sized to carry the Code required live load for public spaces of 100 pounds per square foot (psf). Alternatively, the 8x8 girders and quadruple 2x10

beams in Room 02 and Room 03 are undersized according to preliminary calculations, but the redundancy of the floor framing in this area and the fact that no distress was observable does not indicate that any major work need be done to this floor framing. If the space is used for public assembly, it may be prudent to limit the amount of people allowed on the floor at one time.

During the installation of the staircase in the late 20<sup>th</sup> century, the ends of a plied girder were cut off and so was the tension rod running through the assembly (*Re: Figure 48*). The tension rod is no longer able to act as intended.

At the northwest corner of the Bar in the Shoo Fly, the ceiling joists are slipping off of the steel angle ledger (*Re: Figure 40*). This is a result of the north wall of the Shoo Fly leaning towards the north.

#### Recommendations:

- In order to perform structural analysis of the buildings, accurate as-built structural plans will be required. Develop as-built structural plans of the original framing and all of the various modifications to individual elements including the new bearing lines introduced in the abandoned casino renovation. (Critical)
- Remove all the existing concrete floor surfaces, install a new vapor barrier on the soil and install a new concrete slab on grade. This new concrete slab on grade could be designed with wood nailers to receive a new wood floor system, or a new elevated wood framed floor system with a small crawl space could be hung from new ledgers attached to the existing masonry walls. (Critical)
- Infill or rehabilitate the open joist pockets on the lower level of the Shoo Fly. If wood framing is re-established for a floor in this section of the building, the joist pockets could be re-used. If a concrete slab is established with a floor on top of the slab which does not necessitate joist pockets, infill the joist pockets with masonry matching the existing. (Serious)
- Leave the new bearing line added during the casino renovation that supports members above with deteriorated end support conditions in place and do not alter until the original floor structure bearings are repaired. (Critical)
- Remove deteriorated portions of the joists and install sister members that extend to competent bearing elements such as a ledger bolted into the masonry. (Critical)
- Provide visible signage that indicates the maximum amount of people allowed on the main level floor of the Theatre to avoid overstressing the floor framing system. (Minor)
- Reset the ceilings joists in the northwest corner of the Shoo Fly building. (Serious)
- Coordinate structural removal of existing modern stair at the northeast corner with architectural recommendations for historically appropriate stair. (Serious)



*Figure 37: Former joist pockets for the lower level of the Shoo Fly*



*Figure 38: Upper level floor framing of the Shoo Fly. Note the x-bridging, the sistered members to the left of the image, and the lath markings on the bottom face of the joists*





*Figure 39: Two parallel layers of 1x horizontal sheathing on the upper level of the Shoo Fly*



*Figure 40: Ceiling joists of the Shoo Fly bear on a steel angle attached to the concrete framed openings between the bar and the theater*



*Figure 41: The lower level framing of the Theatre consists of joists, 8x8 girders, and trussed beams*



*Figure 42: A 7/8 inch diameter rod and quadruple-ply beam compose the trussed wood beams*





*Figure 43: Supplemental bearing line installed in the late 20th century just north of the wall between Room 01 and Room 02. This bearing line must remain in place until all work on the floor and walls is completed*



*Figure 44: The mezzanine of the Theatre is framed with 2x8 joists supported on wrapped six-ply beams*



*Figure 45: Mezzanine floor is hung from the roof timber trusses with 1 3/4 inch diameter rods*



*Figure 46: Triple-ply laminated veneer lumber beam supporting the stage framing*





*Figure 47: The ends of most of the upper level joists throughout the building have decayed and have limited bearing remaining*



*Figure 48: The end of the trussed beam has been removed and the tie rod has been shortened and attached to the side of the remaining beam*

### 3.2.4 Roof Framing System

The roof systems of the Shoo Fly and the Theatre are constructed of wood framing while the roof of the Stage addition is constructed with metal joists. Additional timber trusses were added to the Theatre building after the original date of construction.

#### Shoo Fly

In the Shoo Fly Theatre, the roof is framed with 2x12 roof rafters spanning north to south between the brick masonry walls. Plywood sheathing spans between the rafters, but in the locations where portions of the parapet have been removed, there are no elements, such as a soffit, to protect the ends of the joists and enclose the building (*Re: Figure 49*).

#### Theatre

In the Theatre building, there are two roof framing systems: an original flat roof and a higher trussed roof. The original flat roof is framed with 2 inch by 10 inch roof rafters spaced at 16 inches on center. These members span in the north-south direction. Due to lack of access (prevented by ceiling and roof finishes), it is not known for certain how the roof rafters are supported currently. But it appears that a series of 7/8 inch in diameter rods extend downwards from the newer trusses above to support this original framing (*Re: Figure 50*). This configuration indicates that there may have been interior brick walls that formerly extended to the roof level to support the rafters. These walls may have been installed sometime during the building's use as an armory or a fire station and may have been removed when the upper level was converted back to a theatre. The rafters are sheathed on top with 3/4 inch horizontal skip sheathing covered with a metal flat seamed roofing material. On the bottom, the ceiling is sheathed with gypsum board.

Roughly a decade after the rebuilding of the Theatre building, a series of stained 6 foot tall wood timber trusses were added, spanning from the north to the south wall. The timber trusses are spaced at 8 to 13 feet on center. Their orientation follows the irregular shape and roofline of the building. These trusses are composed of plied lumber members, larger sawn timbers, and 1 inch in diameter rods bolted together (*Re: Figure 51*). Each truss has a unique top chord configuration due to the roofline geometry. At the walls, the trusses are supported on 6 inch by 11 1/2 inch timber columns that extend to the lower level of the building. These columns are flush up against the walls and the bottom chords of the trusses extend past the columns to partially bear on the brick masonry walls. The trusses are supported laterally against each other by several wood bracing members. A series of diagonal struts spanning from the top of the trusses to the bottom chord of the next truss to the west brace the trusses against one another. Additionally, a 3 1/2 inch by 5 1/2 inch wood member spans between the centers of the bottom chords of the trusses that are attached with thru bolts through the bottom chords. Also, 6 inch by 8 inch wood beams span between the trusses at both ends of the top chord (*Re: Figure 52*). Both the original flat roof of the Theatre and the Mezzanine level are hung from the bottom chord of these trusses (*Re: Figure 45 & Figure 50*). Between the easternmost two trusses, a 3/4 inch diameter rod extends between the top chords of the trusses (*Re: Figure 53*). 2x8 rafters span between the trusses in the east-west direction and support a corrugated metal roof.

The easternmost 13 feet of the Theatre is framed with a shed roof that rests on the easternmost truss of the roof. 2x8 rafters span in the east-west direction between the top of the front façade parapet to a ledger attached to the truss. A cripple wall runs in the north-south direction roughly 6 feet from the parapet wall supporting the rafters. Horizontal skip board sheathing, plywood and

corrugated metal roofing sheathe the rafters (*Re: Figure 54*).

#### Stage and Pit

In the Stage addition, the roof is framed with metal joists supported by dropped metal girders spaced at roughly 8 feet on center.

#### Condition:

The roof framing of the Shoo Fly and the Theatre are in poor condition, while the roof framing of the Stage addition is in good condition. In the Shoo Fly, there are many gaps and holes in the roofing membrane allowing water to enter the building (*Re: Figure 49*). The amount of water allowed to enter the building provides an environment conducive to wood decay and deterioration. There are many water stains on the roof framing members and ceiling joists, in addition to the floor framing of the level below. This water damage will continue to worsen if the holes are not closed up.

The original roof framing of the Theatre is in good condition, but the roof trusses above are in poor condition. The top chord of the second truss from the east has rotated to the east. In this same truss, the bottom chord has broken where the inner members of the chord began to rot and one of the diagonal struts has fallen out of place (*Re: Figure 55*). At the southern bearing point of the third truss from the east, the brick bearing has been removed (*Re: Figure 56*).

At the stage, there are no overt signs of distress at this time, but these observations were made from the stage floor about two stories below the roof. Additional site visits to observe the conditions up close should be completed during the design phase of the rehabilitation.

#### Recommendations:

- In order to perform structural analysis of the buildings, accurate as-built structural plans will be required. Develop as-built structural plans of the original framing and all of the various modifications to individual elements and the new bearing lines introduced in the abandoned Casino renovation. (Critical)
- Confirm how the original Theatre roof is framed and how it is currently supported by the roof trusses. Following investigation of theatre roof framing, perform structural analysis of roof trusses and develop repair details for roof trusses. Rehabilitate the trusses as required. (Critical)
- Close all gaps and holes in the roofing, especially in the Shoo Fly, to prevent excess water from entering the building. Refer to Section 3.4.1 for recommendations regarding the building's roofing systems. (Critical)
- Rebuild the southern brick bearing for the third truss from the east in the Theatre. (Serious)
- Confirm the configuration and condition of the Stage roof. (Serious)





*Figure 49: The ceiling joists and rafters of the Shoo Fly. Note that daylight is visible from the interior of the building*



*Figure 50: The original roof rafters are hung from 7/8 inch diameter rods that are attached to the timber roof trusses of the Theatre*



*Figure 51: The timber roof trusses of the Theatre. Note the diagonal bracing between the trusses as well as the horizontal bracing at the bottom chord*



*Figure 52: Large timber girders span between the top chords of the timber roof trusses of the Theatre. Note the 2x8 roof rafters and metal roofing material*





*Figure 53: Between the two easternmost timber roof trusses over the Theatre, a 3/4 inch diameter rod spans between the top chords*



*Figure 54: Roof framing over the easternmost portion of the Theatre. Note the 2x8 rafters and cripple wall about six feet from the parapet*



*Figure 55: The bottom chord has split in the second timber roof truss from the east over the Theatre*



*Figure 56: The missing brick at the bearing point of the third timber roof truss from the east above the Theatre*



### **3.2.5 Building Structure Fireproofing**

Throughout the building, structural components are exposed where interior finishes have been removed or have deteriorated to the point of failure. Where wood framing members are exposed, they are vulnerable to fire and should be concealed by interior finishes when the building is rehabilitated. The masonry walls are inherently fire-resistive and no further fire-proofing of those walls is recommended.

A fire suppression system was installed in sections of the building at an unknown date. This fire suppression system is currently incomplete and non-functional.

#### Recommendations:

- Install appropriate interior finishes throughout the building to conceal wood framing, offering inherent fire resistive properties. (Serious)
- Install a building-wide fire suppression system as part of a building-wide rehabilitation project in preparation for occupation of the building. (Serious)

### **3.3 BUILDING ENVELOPE - EXTERIOR WALLS**

#### **3.3.1 Exterior Wall Construction**

##### **Shoo Fly**

The exterior walls of the original Shoo Fly are a combination of stone ashlar at the lower level with 3-wythe brick at the upper level and parapet. The stone has two coursing patterns. The lower portions of the wall have a rubble ashlar with random coursing while the upper two feet is a more uniform coursing of square cut stone (*Re: Figure 57*). It is possible the upper two feet were reconstructed after the fire burned the interior framing. The upper courses of brick appear to be a soft mud brick, however, much of the brick is covered with paint.

The north wall of the Shoo Fly was incorporated into the Theatre during the construction of the adjacent structure and is now an interior wall of the theater space. A rough arched opening was made in the north wall at the lower level providing access between Room 01 and Room 02 (*Re: Figure 58*). The stone ashlar is approximately 18 inches thick at this location. The wall has two leaves of coursed face stone with an interior rubble fill of smaller stones. Larger stones protrude into the inner core tying the faces together (*Re: Figure 59*). However, thru-stones were not observed to tie the entire wall thickness together. Without thru-stones, the tie between the faces of the wall is tenuous at best. The remainder of the first floor stone walls are likely the same thickness and construction.

Portions of the south parapet wall have been removed to the roof line (*Re: Figure 60*). It appears the bricks from the parapet have been salvaged and are stored inside the building at the bay window (*Re: Figure 61*). There are currently two bay windows and a door opening in the south wall. The windows are not original but appear to be enlarged openings at former door locations. The door between the bay windows is not original. The date of installation of the bay windows and the door is unknown. The side brick walls are constructed with common bond and having tie courses of header bricks every seventh course (*Re: Figure 60*).

The front façade (east elevation) does not have any visible header brick coursing. It is possible that the front façade has concealed diagonal headers (*Re: Figure 62*). It is unlikely that a building from this era would have metal ties between the face wythe and backup brick.

The exterior walls of the Shoo Fly are tied in both orthogonal directions with tie rods and S-shaped anchor plates visible on the exterior faces of the building. The tie rods extend across the length and width of the building. These appear to be part of the original construction (*Re: Figure 63*). The S-shaped plates are visible on several other adjacent buildings of a similar vintage in Central City.

Remnants of burned wood roof framing from an earlier structure are visible in the north face of the second floor north wall. The fire does not appear to have compromised the brick at this location. The remaining charred wood elements do not compromise the overall structural capacity of the wall at this location (*Re: Figure 64*).

##### **Theatre**

The base of the Theatre addition walls and piers are 4-wythes thick. They step down to 3-wythe walls at the lower floor level. The north wall has a running bond pattern with tie courses of header bricks every seven courses. The front (east) façade may have hidden diagonal headers similar to the Shoo Fly construction and is common of façade elevations.

### **Stage and Pit**

The stage walls are modern cast-in-place concrete and concrete masonry unit construction. We are not aware of any available structural drawings detailing the size and spacing of the steel reinforcing bars within the walls.

### Condition:

#### **Shoo Fly**

The component brick and mortar comprising the parapets are in poor condition. Portions of the south parapet have been removed. Presumably this was done to mitigate the potential falling hazard.

The component brick, mortar, and stone comprising the Shoo Fly walls below the roof line are in fair condition due to moisture infiltration and wall movement. However, the deteriorating wood plate at the base of these walls is causing the walls to lean to the north (*Re: Figure 65 & Figure 66*). The north, now interior, wall has leaned most appreciably. The other walls are in poor structural condition with numerous flexural cracks in the south and east walls (*Re: Figure 67*). These leaning walls are braced by the wood floor and roof structure. Note that no modifications to the floors and roof should be performed unless the leaning walls are braced. The west wall leans to the east approximately 4 inches.

The existing exterior paint coating is trapping moisture in the brick masonry. Moisture can get behind the coating of uncoated faces, and once trapped, result in additional deterioration of the brick units due to freeze-thaw deterioration. This process is exacerbated by the unheated state of the building (*Re: Figure 68*). The current deterioration is not yet a structural concern. However further deterioration of the masonry at the base of the walls could become a structural concern if it is allowed to continue.

### **Theatre**

The east wall has numerous cracks between the east wall and perpendicular masonry walls (*Re: Figure 69, Figure 70 & Figure 71*). The east wall is tilting east and the cross walls are no longer resisting the movement as the interfaces are cracked. The wall requires temporary lateral bracing until permanent new connections are installed between the east wall and interior floors and roofs. It was determined in the field that the condition was severe. Therefore a façade bracing scheme was designed separately and is located in the appendix of this report for reference.

The east wall is coated with paint and the condition of the underlying brick is somewhat concealed. The underlying brick appears to be in fair condition with some eroded mortar joints and some diagonal cracking visible through the coating.

It appears from photos in an earlier report on the building (1996 by A-E Design Associates) that the face brick had some erosion of the brick faces themselves prior to installation of the existing coating. The existing coating is trapping moisture in the brick and resulting in additional degradation of the brick body due to freeze-thaw deterioration. This freeze-thaw process is worsened because the building is unheated. The current state of deterioration is not yet a structural concern, but could become critical if not treated.

### Stage and Pit

The stage concrete and concrete block walls are in good structural condition. However, the size and spacing of the steel reinforcing bars within the CMU and concrete walls are unknown. The modern reinforced concrete construction at the stage could be incorporated into schemes that brace or strengthen the existing un-reinforced masonry construction lateral systems at other portions of the building. (i.e. the stage could function as an anchor/buttress for weaker portions of the structure).

### Recommendations:

- Rebuild the leaning portion of the south wall of the Shoo Fly. Use the original brick to rebuild the wall. (Critical)
- Insert a steel angle brace at the horizontal bed joint separating the random coursing and more rectangular coursed stone to brace the bowing portions of the south wall of the Shoo Fly. (Critical)
- Tie exterior masonry walls together with helical anchors to ensure that all wythes are tied together. (Critical)
- Further investigate and repair the deteriorated wood located at the base of the wall. Refer to the General Structural Systems recommendation for further explanation.
- Temporarily brace the front façade in accordance with the details attached in the appendix to this assessment until a more substantial/permanent repairs are enacted that tie the brick façade to the wood floor and roof diaphragms. (Critical)
- Further investigate the brick at the front (east) façade to determine if blind headers exist. The collar joint in this system can deteriorate due to freeze-thaw action and debonds the face wythe from the inner wythes. The face wythe should be sounded for delaminating areas and pinned with stainless steel helical anchors if delaminated brick areas are identified. This work should precede the masonry cleaning and restoration described below. (Critical)
- Remove existing coatings and restore masonry. Re-coat with a breathable masonry coating if appropriate and desired. The existing paint film has the potential to cause further damage to the underlying masonry. Paint stripping should not utilize any mechanical abrasion, but should be completed with non-damaging chemical strippers. Several strippers and dwell times will need to be mocked-up to determine the appropriate material, application temperature and dwell time to effectively remove the existing paint coating prior to repair work. The coating should be removed using the gentlest effective paint removal system identified in the cleaning trials. Abrasive blast removal of the coating must not be used on this soft brick as it will damage the face of the brick. (Critical)
- Rehabilitate the north and west walls to prevent further movement and resultant deterioration. (Critical) Rehabilitation should include:
  - Investigation of masonry walls to determine if blind headers are present.
  - Installation of helical ties to tie wythes together.
  - Repoint areas of missing and deteriorated mortar.
  - Replace sections of missing and deteriorated masonry.
  - Secure walls to the rest of the building structure to stabilize the walls and limit movement.
- Repoint cracking and deteriorating mortar joints at the east wall of the theatre section of the building. (Critical)
- If the masonry restoration and coating removal cannot be enacted for several years, installing a temporary heating system to keep the building interior above freezing will mitigate the rate



of freeze-thaw deterioration that the masonry currently experiences. (Serious)

- Further non-destructive evaluation of the stage walls construction is recommended to determine its structural strength and stiffness for use in an overall lateral analysis of the three adjoining structures. (Serious)
- Follow recommendations in Section 3.4.1 to address issues with the roofing systems. Addressing the roofing on the building will help to prevent water infiltration at the exterior wall assemblies.



*Figure 57: In the Shoo Fly, the coursing of the masonry shifts from rubble ashlar stones with random coursing for the bottom of the wall to uniform coursed square cut stone for the upper two feet of the wall*



*Figure 58: Rough arched opening made in the north wall of the lower level between Room 01 and Room 02*



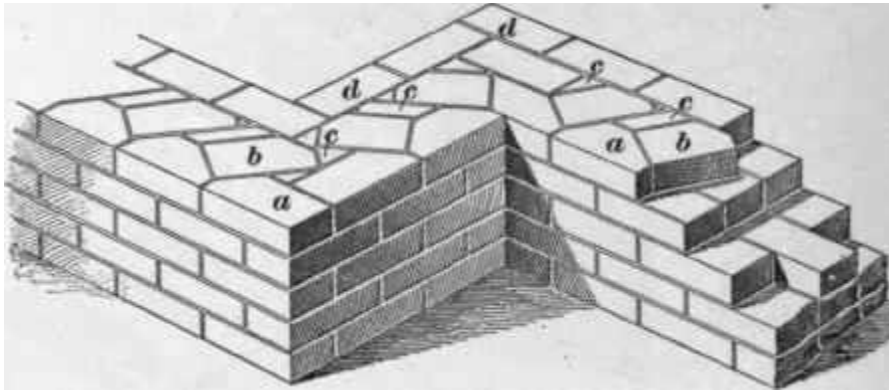
*Figure 59: Some larger stones protrude into the core of the wall tying the faces together*



*Figure 60: Some portions of the parapet of the south wall of the Shoo Fly have been removed down to the roof line*



*Figure 61: Salvaged brick from the south parapet of the Shoo Fly stored in the bay window of the same wall*



*Figure 62: Diagram of concealed diagonal headers in a brick masonry wall (image from “The Art of Bricklaying”). This condition may be present at the exterior masonry walls, but should be confirmed.*



*Figure 63: Exterior ties and S-shaped anchors along the west wall of the Shoo Fly*





*Figure 64: Joist pockets and charred remains of an earlier structure in the same location that the Theatre currently occupies*



*Figure 65: The south wall of the Shoo Fly is leaning north as evidenced by the bowing in the wall. See the red reference line on the image*



*Figure 66: The south wall of the Shoo Fly is leaning north due to the deteriorating wood plate embedded at the base of the wall on the interior of the structure. See the red reference line on the image.*



*Figure 67: Flexural cracks in the stone masonry wall due to the wall leaning to the north*



*Figure 68: The coating on the bricks, shown failing here, traps moisture against the brick masonry walls. This excess moisture adds to the effects and erosion due to freeze-thaw action*



*Figure 69: Cracks in the masonry wall between Room 01 and Room 02. At the intersection of the perpendicular walls the movement is also displayed by the separation of the walls from one another*





*Figure 70: At the intersection of the walls at the corner as seen in Figure 69, bricks tying the walls together have sheared off with the movement*



*Figure 71: Closer image of the sheared bricks as explained in Figure 70*



### 3.3.2 Exterior Finishes

The east elevation of the theatre section of the building has a wood cornice at the top of the wall (*Re: Figure 72, Figure 73, and Figure 74*). A similar cornice is located lower on the wall above the north-most entrance to the building on the east elevation (*Re: Figure 75*). Both cornices have paired brackets with decorative scrollwork and a boxed out wood paneled cornice. The cornices are not original to the building. The original cornice is visible in historic photographs. In photos from the 1950s and 1960s there is no cornice visible along the east elevation of the building. In photos dated 1997, the extant cornice is visible. The extant cornice does not match the cornice in the historic photos as there are a different number of brackets and the details at the north and south ends of the cornice are different. The lower cornice, located above the north-most entrance, is not visible in historic photographs. It is believed to have been added when the upper cornice was re-constructed or added.

Above the cornice, a section of the east elevation is set back. This section of the elevation serves as the east end wall of the attic space. The exterior of this wall is covered with horizontal wood siding (*Re: Figure 76*). This siding was likely installed when the roof was converted from a flat roof to the pitched roof.

The east elevation of the Shoo Fly section of the building has a painted cementitious parge coat at the lower section of the building. This parge coat covers the steps up to the entrances into the Shoo Fly section of the building (*Re: Figure 77*). This parge coat continues along the lower section of the theatre section of the building, concealing the foundation from the exterior. The date of application of the parge coat is unknown.

The south elevation of the Shoo Fly has a stone masonry foundation with painted brick masonry above.

The fly space at the west end of the building is constructed with exterior concrete walls. Along the upper section of the west elevation of the fly space, there is a painted wood fascia board.

The section of the building which would have been located to the west of the kitchen section of the building is constructed of triple wythe red brick masonry walls with buff colored mortar joints. The brick is soft. A parge coat is partially extant at the lower section of the exterior walls.

Where the kitchen section of the building was removed, walls which were originally interior walls are covered with painted plaster (*Re: Figure 78*).

Along the gutter on the north elevation of the theatre there is corrugated metal covering the upper three feet of masonry. Along the south elevation of the theatre, there is vertical wood siding (*Re: Figure 79*).

#### Condition:

The wood cornice along the east elevation of the theatre building is in poor condition (*Re: Figure 72, Figure 73, and Figure 74*). Paint failure is typical at all cornice components which has resulted in wood weathering and deterioration. Joints between wood components are separating and in some sections, the wood boards are split. Along the lower edges of the small brackets, material loss is typical. In addition, water is leaking through the cornice along the east elevation of the theatre

section of the building. The leaking joint is located between one piece of flat wood trim and a piece of profiled wood trim mounted on the flat trim. Along the flat trim, drips of roofing tar are visible.

The wood siding on the upper section of the east elevation is in fair condition. The wood is not painted and has therefore been subject to weathering and UV exposure. The wood is dried out and sun scorched. Sections of the wood siding were not accessible for full evaluation.

The painted parge coat at the lower section of the east elevation of the Shoo Fly is in poor condition (*Re: Figure 77*). Paint failure is typical along the parge coat. Sections of the coating have delaminated, allowing for masonry deterioration along the base of the building. Where the parge coat is extant, cracking and sections of spalling are typical. The parge coat along the lower section of the theatre section of the building is in fair condition with some areas of cracking and spalling visible. The date of installation of the parge coat is unknown. It may be serving to protect the lower section of brick from further deterioration and can be rehabilitated unless the building is restored to particular time period during which the parge coat was not extant.

The wood fascia board along the west elevation of the fly space is in poor condition. The paint is failing and the wood is weathering as a result of roof drainage across the fascia board due to a lack of gutter at the roof edge. The joints between fascia boards are separating and the fascia boards are warped and twisted due to wetting and drying of the wood. Along the fascia boards, wood roof framing members are visible.

The plaster finish on the exposed masonry walls where the kitchen was demolished is in poor condition (*Re: Figure 78*). Sections of plaster are missing, having delaminated entirely from the brick substrate. The remaining plaster has extensive paint failure, plaster cracking, and areas of spalling. This finish was not intended to be an exterior finish. Removal of the kitchen in this area of the building has expedited deterioration of the plaster and subsequently exposed brick.

The sheet metal along the upper section of the north elevation is in poor condition. The metal is deteriorated and rusting. The joints between sheet metal panels are separating. The east section of sheet metal has been painted; the south section is not painted. The vertical siding on the upper section of the south elevation is in fair condition. The siding has roofing asphalt adhered to it where flashing was originally run up the wall from the adjacent roofs. In addition, paint deterioration is typical along this section of the elevation.

#### Recommendations:

- Remove the cornice along the east elevation of the theatre section of the building. When cornice is removed, rehabilitate brick masonry as required at the upper section of the east elevation. Upon completion of masonry rehabilitation, install new wood cornice in compliance with the Secretary of the Interior's Standards for Rehabilitation. (Serious)
- Complete the following rehabilitation scope to slow on-going deterioration and protect adjacent materials if the existing cornice is to remain on the building (Critical):
  - Remove loose material to protect pedestrians below.
  - Seal the joint between the flat and profiled wood trim at the top of the cornice where water is currently leaking through.
- Rehabilitate parge coat at the lower section of the east elevation. Rehabilitation should include removal of loose material, rehabilitation of the masonry substrate, and re-parging the

base of the building. When the parge coat is re-installed, it can be painted with an appropriate product. (Serious)

- Replace the wood fascia board along the west elevation of the fly space. (Critical) When fascia board is replaced, install appropriate roof drainage system as outlined in Section 3.4.4.
- When the kitchen is reconstructed, rehabilitate the plaster on the interior walls of the kitchen space which are currently exposed to weathering and deterioration. (Serious) Rehabilitation of these walls will include the following:
  - Remove loose and damaged plaster
  - Patch plaster where sections of plaster have delaminated
  - Prep, prime, and paint plaster
- Complete evaluation of wood siding at the upper section of the east elevation to determine if replacement is required or if rehabilitation is possible. (Serious)
- Remove sheet metal located along the upper section of the north elevation. Rehabilitate the north wall of the building so a sheet metal covering is not required. (Serious)
- Remove vertical wood siding at the upper section of the south elevation. Rehabilitate the south wall of the theatre building so that the vertical wood siding can be removed. (Serious)



*Figure 72: Overall view of east elevation of the theatre section of the building. Note the wood cornice along the top of the building.*



*Figure 73: Detail view of cornice condition along the east elevation of the theatre. Note extensive paint failure and wood deterioration typical along the cornice.*



*Figure 74: Detail view of cornice along the east elevation of the theatre. Note paint and wood deterioration. Also note the tar drips between trim pieces at the top of the cornice. This joint is also where water leakage is occurring.*





*Figure 75: Detail view of cornice above the north entry on the east elevation.*



*Figure 76: Wood siding on the upper east elevation of the theatre.*



*Figure 77: Parge coat on the lower section of the east elevation.*



*Figure 78: Plaster walls where the kitchen was removed.*



*Figure 79: Vertical siding along the south elevation of the theatre building.*



### 3.3.3 Exterior Masonry

Refer to Section 3.3.1 for additional information regarding the exterior masonry walls of the building.

The exterior masonry is painted on all elevations of the building. The number of coats of paint and types of paint on the building is unknown. In early photos of the building, it appears to be unpainted. Later photos show that the building was painted as early as 1900. In photos dating from 1968 it is possible that the paint was removed. However, the building may have just been painted a different, darker color. According to City records, the current exterior paint is a traditional exterior latex paint, which may not allow the masonry to breathe adequately. Central City records indicate that the building was most recently repainted in 2006. At that time, the following color scheme was filed, referencing Benjamin Moore Historic Colors:

Shoo Fly base: Boothbay Gray HC-165  
Shoo Fly brick arches and trim: Hodley Red HC-65  
Shoo Fly window and door trim: Livingston Gold HC-16  
Theatre base: Montgomery White HC-33  
Theatre brick arches and trim: Philipsburg Blue HC-159  
Theatre window and door trim: Livingston Gold HC-16

The section of the building to the south of the fly space (identified as the ‘cooler’ on the lower level floor plan) has some exposed brick masonry where the exterior parge coat is missing. The exposed brick is soft red brick laid in common bond.

To the east of the ‘cooler’ space, a kitchen was demolished in 1998. Remnants of the kitchen are extant on site and documentation pertaining to this section of the building is on file with the City.

#### Condition:

The paint coating on the building is in poor condition (*Re: Figure 80 and Figure 81*). The paint is peeling off in numerous locations. In many of these areas, the paint is taking the face of the brick off the building as well (*Re: Figure 82*). Generally, oil based alkyd paint will get brittle over time and will fail much as the paint on the building is failing. On the east elevation of the theatre section of the building, water staining and ice were visible on the face of the building from between the roof and the cornice.

The exposed brick at the section of the building to the south of the fly space is in poor condition, particularly at the parapet (*Re: Figure 83*).

#### Recommendations:

- Remove the paint coating from the exterior of the building. Once coating has been removed from the exterior of the building, rehabilitate brick masonry. If painting the building is appropriate and desired, a breathable coating appropriate for painting masonry should be used. (Critical)
- Replace missing and severely damaged brick at the section of the building to the south of the fly space. Repoint sections of brick as required. (Critical)
- Reconstruct the kitchen section of the building. The kitchen should be reconstructed using documentation of the original kitchen to design the reconstruction work. (Serious)





*Figure 80: Paint deterioration on the east elevation of the theatre section of the building.*



*Figure 81: Detail view of paint deterioration on the east elevation of the theatre section of the building.*



*Figure 82: Detail view of paint failure and masonry deterioration on the east wall of the theatre section of the building. Note peeling paint is taking the faces of the brick off.*



*Figure 83: Parapet deterioration at lower roof to the south of the fly space.*



### 3.3.4 Exterior Appendages – Entrances, Porches, Stoops, Porticos, and Chimneys

On the south elevation of the Shoo Fly there is an exterior stair accessing the side door to the Shoo Fly (*Re: Figure 84*). This stair and the associated landing are constructed of wood framing with wood decking at the landing. There is a handrail constructed of wood posts and a wood railing along both sides of the stair and along the outer edges of the landing. Framing for the landing runs parallel to the exterior wall of the building and is not supported properly.

The north entrance on the east elevation is raised one step above the adjacent sidewalk. Within the raised entry area there is a brick landing which extends from the sidewalk to the building entrance (*Re: Figure 85*). Access into the raised entry area is provided via two arched openings in the exterior masonry wall. In the entry area there are two sets of doors which are described in greater detail in Section 3.5.1 Exterior Doors and Hardware. To the north and south of the doors there are angled masonry walls. In each of these walls is an opening for a ticket window (*Re: Figure 86 and Figure 87*). These windows are not visible in historic photos as this entrance was modified from its original configuration. The date of installation of these windows is unknown. Inside the entry area, the lower sections of the walls are painted brick masonry. At the top of the painted brick is painted running wood trim. Above the wood trim, the walls are covered with painted stucco. The existing configuration of this entrance is not original. Historic photos indicate that the original entrances in this location included two sets of doors with transom windows above, each flush with the east exterior wall of the building.

In the center of the north section of the east elevation of the building there is a recessed entry area. This entry area is accessed via one large and one smaller arched opening. At these openings there are stone steps up from the City maintained sidewalk into the entry area (*Re: Figure 88*). At the large arch, there are laminated wood planks which follow the curve of the arch. Within the entry area there is a concrete landing area. A masonry foundation is visible at the east edge of the concrete landing. Within the recessed entry area, the walls are covered with painted stucco. The ceiling in the recessed entry consists of exposed trussed wood beams (*Re: Figure 89*). A metal turnbuckle is visible. Evidence of a ceiling being affixed to the framing at some point is visible. In the recessed entrance area there are two single doors into the theatre section of the building (*Re: Figure 90*). These doors are described in greater detail in Section 3.5.1 Exterior Doors and Hardware.

Along the south elevation of the Shoo Fly there is one chimney (*Re: Figure 91*). The chimney is constructed of brick which is partially covered with a parge coat. The entire chimney is painted.

#### Condition:

The stair and landing at the south entrance to the Shoo Fly are in poor condition (*Re: Figure 92*). The handrail does not meet code requirements for height or spacing of balusters. The landing framing is not code compliant and is not adequately supported. The wood components at this entrance have experienced paint failure and subsequent wood weathering.

The recessed entrances along the east elevation of the building are in fair condition. Neither recessed entry has retained its original configuration or appearance. In the north entry recess, paint and masonry deterioration were noted. At the windows in the angled walls, trim is missing at the jambs. Hairline cracking is visible at the stucco above the brick. The recessed entrance in the middle of the east elevation of the theatre section of the building is in fair condition. Cracks are visible at the stucco. The ceiling in the entrance is unfinished. The entrance is slightly raised above

the adjacent public sidewalk, which does not comply with accessibility requirements.

The chimney along the south elevation of the Shoo Fly section of the building is in poor condition. Sections of the parge coat have delaminated from the brick chimney. In addition, cracking and paint deterioration are typical on the exterior faces of the chimney. At the top of the chimney, brick appears to be out of plane.

Recommendations:

- Remove stair and landing at the south entrance to the Shoo Fly section of the building. Install code compliant stair and landing to access this entrance to the building. The stair and landing should be designed to complement the historic character of the building. (Critical)
- Rehabilitate recessed entrances on the east elevation of the theatre section of the building. (Serious) Rehabilitation should include:
  - If restoration of the building is desired, modify entrances and recesses to match historic appearance. If rehabilitation is the approach used for the building, new, historically compatible design for these locations is appropriate.
  - Replacement of missing finishes.
  - Rehabilitation of existing finishes including stucco and masonry.
  - Establish one entrance as an ADA compliant access to the building.
- Rehabilitate the chimney on the south elevation of the Shoo Fly. (Serious) Rehabilitation should include:
  - Rehabilitation of brick masonry including repointing, replacement of missing or damaged brick, and resetting of out of plane masonry.
  - Rehabilitation of parge coat including repair of cracks, patching missing sections, and prepping, priming, and painting.



*Figure 84: Overall view of stair and landing at the south entry to the Shoo Fly.*





*Figure 85: Overall view of north entrance on the east elevation. Note that the north end of the opening is raised above the adjacent sidewalk.*



*Figure 86: Ticket window opening in the south wall of the north-most entry recess.*



*Figure 87: Overall view of ticket window in the north wall of the north-most entry recess.*



*Figure 88: Steps from sidewalk along the east elevation up to the entrance in the center of the theatre section of the building.*



*Figure 89: Overall view of ceiling in the center entry in the east elevation of the theatre section of the building.*



*Figure 90: Two doors in the center entrance in the theatre section of the building.*



*Figure 91: Chimney along the south elevation of the Shoo Fly.*



*Figure 92: Detail view of stair and landing at the south entrance to the Shoo Fly section of the building.*



### ***3.4 BUILDING ENVELOPE - ROOFING AND WATERPROOFING***

#### **3.4.1 Roofing Systems – General**

##### *3.4.1.1 Pitched Roofs*

The roof above the theatre is a low-pitched gambrel roof (*Re: Figure 93*). The roof is currently covered with grey three-tab asphalt shingles. According to Central City records, the north side of the upper roof was replaced in 2006. At this time, new sheathing was also installed.

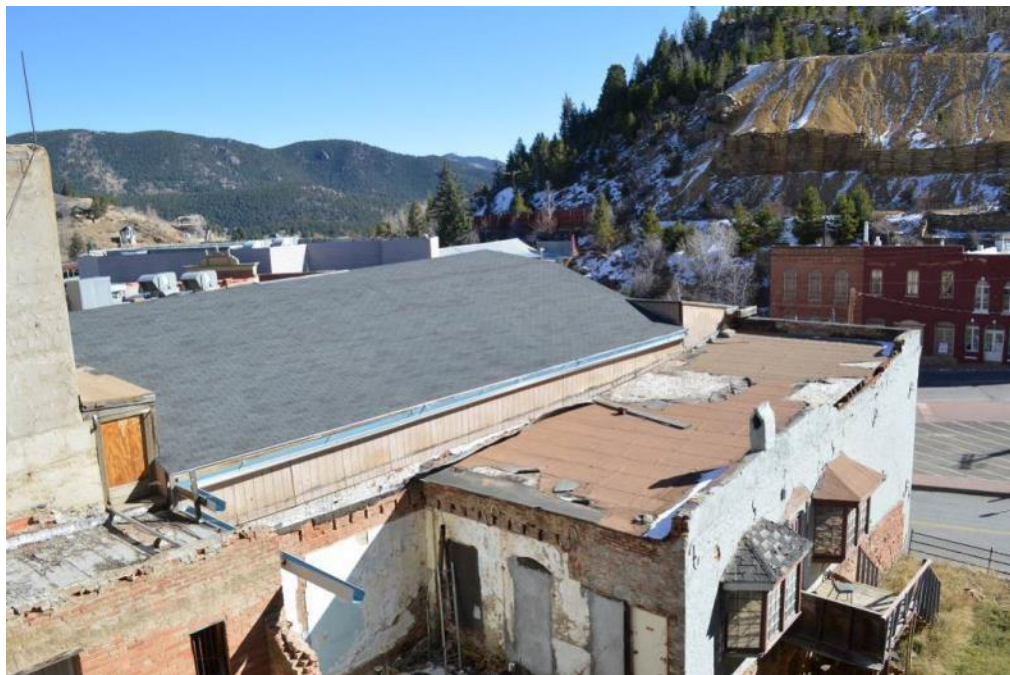
Corrugated metal roofing is visible from the inside of the attic space (*Re: Figure 94 and Figure 95*). This roofing is extant below the exterior asphalt shingles. Given the presence of ASTM numbers and trademark information on the roofing material, it was likely installed circa 1950.

##### Condition:

The roof on the theatre is in fair condition. The asphalt shingles on the north slope were installed approximately 10 years ago and are still performing their intended function. However, the asphalt shingles are not historically appropriate. When the shingles were installed, appropriate flashing was not installed at end walls or along drip edges.

##### Recommendations:

- Replace the roof on the theatre space with historically appropriate roofing material such as corrugated metal. (Serious)
- When the roof is replaced, install sheet metal flashing where required. (Routine)



*Figure 93: Overall view of the south side of the theatre roof.*



*Figure 94: Corrugated metal roofing visible from the attic space.*



*Figure 95: Detail view of corrugated metal roofing material visible in the attic space. Note ASTM and trademark information stamped on the material.*

### 3.4.1.2 Flat Roofs

Originally, the theatre was covered with a flat roof. This roof is visible in historic photographs. In the attic space, the original roof surface with sheet roofing material is extant (*Re: Figure 96*). The roofing material is flat seam metal roofing, possible terne metal. This type of roofing is also sometimes known as tin roofing. The current roof was constructed atop the original flat roof. This roof is described in Section 3.4.1.1 Pitched Roofs.

The east section of the theatre has a low slope roof (*Re: Figure 97*). This section of roof can be accessed via a door from the attic space above the theatre. The roof slopes down to the east. This section of the roof is covered with brown asphalt roll roofing. Corrugated metal roofing material is visible below the asphalt roofing material at the door accessing the east low slope roof (*Re: Figure 98*). In historic photos a shed roof is visible on this section of the building (*Re: Figure 7 and Figure 8*). Photographs from prior to 1951 show a flat roof at this section of the building. Therefore, the shed roof was installed prior to 1951. The exact date of installation is unknown.

The roof on the Shoo Fly section of the building is a low-slope roof which drains to the west (*Re: Figure 99 and Figure 100*). Where roofing material is extant, it is brown asphalt roll roofing atop OSB sheathing.

The lower flat roof to the south of the fly space is covered with an EPDM roof (*Re: Figure 101*).

The roof of the fly space at the west end of the building is covered with brown asphalt roll roofing material (*Re: Figure 102*). The roof slopes to the west and drains off the roof edge down the face of the building as there is no gutter along the roof edge. Toward the east end of the roof there is a projection.

#### Condition:

The roof at the east section of the theatre is in poor condition. Sections of asphalt roll roofing are missing, leaving OSB sheathing exposed (*Re: Figure 103 and Figure 104*). Where exposed, the OSB is weathered and deteriorating. Where the asphalt roll roofing is present, granule loss is evident across the surface. In addition, the roofing is wavy as it is delaminating from the OSB sheathing.

The roof on the Shoo Fly section of the building is in poor condition (*Re: Figure 99*). Sections of asphalt roll roofing are missing, leaving OSB exposed. The remaining asphalt roll roofing material is in poor condition with sections peeling up and delaminating from the sheathing. From the interior of the building, daylight is visible at the perimeter of the roof (*Re: Figure 105*). In addition, the joint between the roof and the south wall of the theatre is not sealed, which allows water into the building. This water infiltration extends to both the upper and lower level of the Shoo Fly section of the building and leads to water damage, decay, growth of mold and moss, and formation of ice during cold weather (*Re: Figure 106*).

The lower flat roof to the south of the fly space is in poor condition. The roofing material is deteriorated with granular loss, separating joints and small sections peeling and missing. In addition, the roof edges are not properly flashed.

The roof on the fly space at the west end of the building is in fair condition. Areas of material deterioration are visible along the roof edge. Given the deterioration visible on the roof edges,



replacement will likely be required within five years.

Recommendations:

- Replace roof at the east section of the theatre with appropriate roofing material such as corrugated metal panels or asphalt roll roofing. If a flat roof is re-established to match the historic appearance of the building, flat roofing material such as EPDM may be used in this area. (Critical)
- Replace roof on the Shoo Fly section of the building. A membrane material such as EPDM would be an appropriate replacement material for this section of the building. (Critical)
- Replace lower flat roof located to the south of the fly space (identified as the 'cooler' on the lower level floor plan). A membrane roofing material such as EPDM would be an appropriate replacement material for this section of the building. (Critical)
- Replace roof on the fly space. A membrane material such as EPDM would be an appropriate replacement material for this section of the building. (Serious)



*Figure 96: Original sheet roofing material extant on the floor of the attic.*





*Figure 97: Overall view of low-slope roof at the east end of the theatre.*



*Figure 98: Detail view of corrugated metal roofing material visible at the door accessing the roof at the east end of the theatre.*



*Figure 99: Overall view of the roof on the Shoo Fly section of the building.*



*Figure 100: Overall view of the roof on the Shoo Fly section of the building.*





*Figure 101: Overall view of EPDM roof on the lower flat roof to the south of the fly space.*



*Figure 102: Overall view of the roof on the fly space at the west end of the theatre building.*



*Figure 103: Overall view of OSB sheathing along the east end of the theatre.*



*Figure 104: Detail view of deteriorating roofing material along the east edge of the theatre roof.*





*Figure 105: View of the Shoo Fly roof from the interior of the building.*



*Figure 106: Water infiltration and ice formation in the lower level of the Shoo Fly section of the building due to the poor condition of the roof.*

### 3.4.2 Sheet Metal Flashing

At the east end of the theatre, the pitched roof at the east end of the building projects above the main roof. At either end, the back side of the east roof is covered with sheet metal panels. The upper section of the north elevation is covered with sheet metal panels which are interrupted by truss ends which extend through the sheet metal panels. Along the north and south elevations, sheet metal flashing is visible along the roof edges. At the attic access opening at the west end of the theatre space, edge flashing is visible below asphalt roll roofing material (*Re: Figure 107*).

Remnants of flashing material are visible along the north edge of the roof on the Shoo Fly section of the building where the roof of the Shoo Fly meets the south wall of the theatre section of the building.

The roof of the fly space has sheet metal flashing at the parapet caps. The parapet walls at the Shoo Fly section of the building and the lower roof to the south of the fly space do not have parapet cap flashing.

#### Condition:

The sheet metal flashing visible on the theatre section of the building is in fair condition. The flashing has sections of deformed material.

The remnants of flashing material visible along the north edge of the Shoo Fly roof are in poor condition. This material has detached from the south wall of the theatre section of the building and there is no water-tight seal along this joint.

#### Recommendations:

- Replace flashing when roofs are replaced. (Critical)
- If roof replacement will not be imminent, temporarily protect open joints such as the joint between the Shoo Fly roof and the south wall of the theatre section of the building. (Critical)



*Figure 107: Detail view of edge flashing at attic access opening.*

### 3.4.3 Perimeter Foundation Drainage

No evidence of a perimeter foundation drainage system was observed on site nor is there record of installation of a perimeter foundation drainage system. Given the date of construction of the building, it is unlikely that a perimeter foundation drain exists.

#### Condition:

There is no perimeter foundation drainage system present.

#### Recommendations:

- Install a perimeter foundation drainage system as recommended in Section 0.

### 3.4.4 Drainage System, Gutters, and Downspouts

Along the north and south edges of the theatre roof there are K-style sheet metal gutters (*Re: Figure 108*). These gutters are approximately 6 inches wide and 6 inches deep. At the northeast corner of the theatre there is a downspout which is piped below grade. The pipe daylights at the curb adjacent to the parking spaces to the northeast of the building.

There is a gutter along the east edge of the lower roof to the south of the fly space. This gutter projects past the south wall of this section of the building and discharges directly into the courtyard.

The roof of the fly space drains to the west. Along the west edge of the roof there is no gutter.

#### Condition:

The gutters along the north and south edges of the theatre roof are in poor condition. The gutters are bent and deformed (*Re: Figure 109*). The downspout at the northeast corner of the building is in poor condition. The paint and brick behind the downspout are deteriorated, indicating that the

downspout is leaking. In addition, water is ponding next to the downspout discharge where the downspout is piped underground (Re: *Figure 110*).

The gutter and downspout on the roof of the building to the south of the fly space are in fair to poor condition. Both have areas of deformation and finish failure. The downspout discharges on grade in the courtyard next to the building, which may contribute to foundation and drainage issues.

The roof of the fly space does not have a gutter to prevent drainage down the face of the west elevation of the building. As a result there is water staining at the northwest corner of the building and in the middle of the west elevation, where the roof drainage collects and runs down the face of the masonry (Re: *Figure 111 and Figure 112*).

Recommendations:

- Replace gutters along the north and south elevations of the theatre. (Critical)
- Replace downspout at the northeast corner of the building and direct discharge into underground drainage system. (Critical)
- Replace gutter and downspout along the edge of the lower roof to the south of the fly space. (Critical)
- Install gutter and downspout along the west elevation of the fly space. (Critical)



*Figure 108: Overall view of gutter along the south edge of the theatre roof.*





*Figure 109: Gutter along the north elevation of the theatre. Note sections of the gutter are deformed and the finish is wearing off.*



*Figure 110: Downspout discharge at the northeast corner of the building.*



*Figure 111: West elevation of fly space. Note water running down the face of the wall due to a lack of gutter and downspout.*



*Figure 112: Fascia deterioration and ice on the face of the west elevation of the fly space due to a lack of roof drainage system on this section of the building.*

### **3.5 DOORS AND WINDOWS**

#### **3.5.1 Exterior Doors and Hardware**

At the north end of the east elevation there are two sets of doors located within the entry area (*Re: Figure 113, Figure 114, and Figure 115*). These doors are painted stile and rail wood doors. Each door has twelve lites in a two by six configuration. Hardware for each door leaf includes three ball tipped hinges and a handle. The north set of doors also has a deadbolt and a hasp, hook, and padlock. Above the doors is a large arched transom window. In historic photos, double doors are visible in each of the arched openings at this entrance. These doors were in-plane with the exterior masonry wall of the building, as opposed to the recessed entry condition that currently exists (*Re: Figure 3*).

In the middle of the east elevation of the theatre section of the building there are two individual exterior doors within the recessed entry area (*Re: Figure 116 and Figure 117*). These doors are modern stile and rail doors, each with a single full glazed panel. The doors are hung in modern frames.

The south-most entry on the east elevation of the theatre section of the building dates to pre-1951, based on historic photos (*Re: Figure 118 and Figure 119*). The doors is flanked by sidelites and has a large round arched transom window above. The doors are stile and rail painted wood doors. Each door has two lower raised panels above which are two arched top glazed panels. The transom window has been covered with painted plywood. The sidelites include two panes of glass above raised wood panels and trim. At the opening there is a stone threshold which is raised slightly above the grade of the adjacent sidewalk.

The Shoo Fly section of the building has two exterior entrances along the east elevation. Each of these entrances includes two doors with an arched transom window above (*Re: Figure 120 through Figure 124*). Each door is a painted stile and rail wood door. Each door has an inset painted wood panel with two glazed panels above. The transom windows each have two panes, which are divided by a single vertical painted mullion. Exterior hardware at the south set of doors includes two hasps and hooks, one of which has a padlock, one deadbolt, and one handle. At the south door opening in the Shoo Fly section of the building there is a single step up into the building. This step is carved into the threshold stone at the opening (*Re: Figure 125*).

There is one exterior door on the south elevation of the Shoo Fly (*Re: Figure 126*). This door is located on the upper level. The door is a modern stile and rail wood door which measures 3 feet by 6 feet 8 inches. The door has nine panes of single pane glazing in a three by three configuration. The glazing is located above two raised vertical panels. Hardware for the door includes a lever lockset. On the interior the door opening has 6 inch wide painted wood casing. There are plinth blocks and corner blocks at both jambs (*Re: Figure 127*).

There is one exterior door on the south elevation of the theatre space. This door would have originally provided access between the theatre and the lower level of the kitchen area (*Re: Figure 128*). The door opening measures 4 feet by 6 feet 8 inches and includes two leaves. The opening is boarded up on the exterior. The doors are painted stile and rail wood doors. Each leaf has one glazed panel above two vertical raised panels. Each glazed panel includes seven panes including one large pane and six smaller panes.

On the west elevation of the Shoo Fly there is an exterior door (*Re: Figure 129*). This door opening would have originally gone into the kitchen space; however, that area of the building was demolished. The door opening measures 2 feet 6 inches by 6 feet 8 inches. The door is a modern painted hollow metal door.

There is one exterior door on the north elevation of the theatre space at the main level and one at the mezzanine level (*Re: Figure 130 and Figure 131*). The main level door is covered with painted plywood on the interior and exterior. The mezzanine level door measures 3 feet by 6 feet 8 inches and is a modern door with modern panic hardware. The door is covered with plywood on the exterior.

There is one exterior door in the west elevation of the fly space and one door on the north elevation of the stage. The door opening in the west elevation is boarded up on the exterior. On the interior, the door opening is boarded up. It is visible at the elevation of the catwalk area above the stage. (*Re: Figure 132 and Figure 133*). The door on the north elevation of the stage is also boarded up.

#### Condition:

The doors at the north end of the theatre section of the building are in fair condition. This entrance has been reconfigured since the original construction of the building and is no longer a usable entrance. The doors are not the historic doors for this entrance, as the original entrance at the north end of the east elevation included two sets of double doors in-plane with the exterior masonry wall.

The two doors in the middle of the east elevation of the theatre building are in fair condition. These doors are not historically appropriate. At each door opening a section of trim is missing at the south jamb. The door components are separating. At the upper corner of the north-most door the door has cracks and chips in the material.

The east doors into the Shoo Fly section of the building are in fair condition (*Re: Figure 134*). Paint failure and wood weathering are typical at both sets of doors. The glazing putty is failing and is missing in some sections. A section of the center astragal at the south set of doors is missing. The north set of doors has one broken pane of glass.

The door on the south elevation of the Shoo Fly is in fair condition. Water staining is visible on the interior of the lowest rail (*Re: Figure 126*).

The doors in the north elevation of the theatre and the west elevation of the fly space are boarded up and inaccessible. If doors remain in the openings, they are presumed to be in poor condition, requiring replacement if the openings are to be re-established.

#### Recommendations:

- As much of the fabric of the original existing doors as possible should be saved. Heavily damaged components should be replaced with matching components. Repairs should include the installation of new components, epoxy consolidation and fill, as required. Scrape, prime and paint to match original color scheme. Frames and transoms should be repaired, scraped, primed and painted. (Serious)
- Replace previously replaced exterior doors with historically appropriate doors, frames, trim, and hardware. (Serious)



- Consider reconfiguration of the entrances along the east elevation to match the original appearance of the building. If a rehabilitation approach is taken for the building, these entrances can be designed to integrate historically compatible doors, as opposed to reconstructing the doors visible in historic photographs.
- Perform routine maintenance on operable components of hardware. Lubricate internal lockset components and hinges on a semi-annual basis. Always remove excess lubricants from exposed surfaces of hardware. Keep hardware components free of paint and dirt. Remove excessive build-ups of dirt and debris. (Routine)
- Protect surrounding original materials when doing any repainting or sealant work. (Routine)
- Depending on the established use for the building, re-establish door openings which have been boarded up such as the door opening on the west elevation of the fly space. (Minor)



*Figure 113: Overall exterior view of the doors at the north end of the building.*



*Figure 114: Overall view of the exterior doors and arched entryway at the north end of the building.*



*Figure 115: Overall interior view of doors at the north end of the east elevation.*



*Figure 116: Overall view of doors in the middle of the east elevation of the theatre section of the building.*



*Figure 117: Overall interior view of doors in the middle of the east elevation of the theatre section of the building.*



*Figure 118: South-most entry on the east elevation of the theatre building.*



*Figure 119: Interior view of the south-most entry door on the east elevation of the theatre building.*





*Figure 120: Exterior view of south doors on the east elevation of the Shoo Fly section of the building.*



*Figure 121: Exterior view of north doors on the east elevation of the Shoo Fly section of the building.*



*Figure 122: Overall interior view of the doors on the east elevation of the Shoo Fly section of the building.*



*Figure 123: Interior view of north exterior doors on the east elevation of the Shoo Fly section of the building.*



*Figure 124: Interior view of the south doors on the east elevation of the Shoo Fly section of the building.*



*Figure 125: Detail view of step up to south opening in the east elevation of the Shoo Fly section of the building.*



*Figure 126: Interior view of the door in the south elevation of the Shoo Fly section of the building.*



*Figure 127: Interior trim detail at the door in the south elevation of the Shoo Fly section of the building.*





*Figure 128: Interior view of doors from the theatre space into the lower level of the no longer extant kitchen area. Note that the door is boarded up on the exterior.*



*Figure 129: Interior view of the door in the west elevation of the Shoo Fly section of the building.*



*Figure 130: Interior view of exterior door in the north wall of the mezzanine.*



*Figure 131: Interior view of main level floor on the north elevation of the theatre space.*



*Figure 132: West elevation of the fly space. Note boarded up door opening to the right in the photo.*



*Figure 133: Overall view of the stage area. Note the west elevation door visible in the upper section of the photo.*



*Figure 134: Detail view of exterior condition of the doors on the east elevation of the Shoo Fly section of the building.*

### 3.5.2 Exterior Windows and Hardware- General

#### 3.5.2.1 Lower Level Windows and Hardware

There are two windows on the lower level of the building. Both of these windows are east-facing.

At the south end of the east elevation there is one exterior window in the lower level of the Shoo Fly section of the building (*Re: Figure 135 and Figure 136*). This window is in a round arch opening and is similar to the doors located in the round arched openings to the north. The window has six panes in a two by three configuration. Below the glazing is painted wood paneling. Based on historic photographs, this window may be original.

At the south end of the east elevation of the theatre section of the building there is one exterior window in the lower level (*Re: Figure 137 and Figure 138*). The window is in a round arched opening and includes four panes of glass in a two by two configuration. Based on historic photographs, this window may be original.

#### Condition:

The first floor windows are in poor condition. Paint failure and weathering wood are typical. Joints between wood components are separating. At the south window on the Shoo Fly section of the east elevation, the lower rail and joint between the window and the threshold / sill below is in poor condition. Voids are visible below the window.

#### Recommendations:

- Rehabilitate the existing windows. (Serious) Follow guidelines in the National Park Service's Preservation Brief 9: The Repair of Historic Wood Windows. Rehabilitation should include the following:



- Install new components where original components are missing or severely deteriorated.
- Apply epoxy consolidation and fill, where wood rehabilitation is possible. It is an important preservation consideration to retain as much of the original material of the building as possible.
- Secure window frames in masonry openings. Seal joints around each window with a high quality elastomeric sealant on the exterior.
- Scrape off loose window putty material and replace window putty where necessary. Match existing composition and color as closely as possible. Replace broken panes to match existing.
- After all repairs have been completed, remove all existing loose paint; sand substrates smooth, repair with epoxy consolidant where necessary, and prime and repaint. All wood surfaces should be primed with a high quality oil-based wood primer and then top coated with two coats of acrylic latex or oil-alkyd paint. Investigation into the original paint scheme of the building should be conducted prior to selecting a new paint scheme. It is desirable to reproduce the original paint scheme if it can be determined. (Serious)
- Weather-stripping the windows would reduce air infiltration and improve thermal comfort in the building. The installation of metal weather-stripping in the jamb and window channels is recommended. Weather-stripping should not detract from the historic appearance of the windows. (Serious)
- Installation of interior storm windows would reduce air infiltration and improve thermal comfort in the building. The installation of interior storm windows should be accomplished in a manner that is sensitive to the historic character of the building and has minimal impact on the extant original materials. (Serious)



*Figure 135: Exterior view of the window at the south end of the east elevation of the Shoo Fly section of the building.*



*Figure 136: Interior view of the window at the south end of the east elevation of the Shoo Fly.*



*Figure 137: Exterior view of east window at the south end of the theatre section of the building.*



*Figure 138: Interior view of east window at the south end of the theatre section of the building.*

#### *3.5.2.2 Upper Level Windows and Hardware*

There are seven windows at the upper level of the theatre section of the building on the east elevation. These windows are likely the original windows based on historic photographs. Historic photos show that there were originally eight windows along the upper level of the theatre section of the building. One window opening was infilled at an unknown date. Each of these windows is a double hung painted wood window in a round arched opening (*Re: Figure 139*). Each of these windows measures 2 feet 9 inches by 8 feet 8 inches. On the interior, the mezzanine level falls in the middle of the openings (*Re: Figure 140*).

The east elevation of the Shoo Fly section of the building has three round arch window openings (*Re: Figure 141 and Figure 142*). In each opening is a wood framed double hung wood window. Each sash has two panes of glazing side by side. Based on historic photographs, these windows are believed to be original.

On the south elevation of the Shoo Fly there are two bay windows (*Re: Figure 143 and Figure 144*). Each opening projects approximately 3 feet south of the exterior wall. The openings for the bay windows measure approximately 8 feet 3 inches wide by 4 feet 4 inches high. The windows are fixed wood framed windows with painted wood mullions. The date of installation of these windows is unknown.

#### Condition:

The upper level windows along the east elevation are in poor condition. Paint failure and wood weathering are typical. Several of the windows have broken and missing wood components. The glass is broken in some of the sash units. Some of the wood and glass breakage and deterioration can be attributed to the movement of the east exterior wall of the theatre section of the building.

The east elevation windows in the restrooms on the second floor are racked out of plane as a result of exterior wall movement (*Re: Figure 145*). The interior and exterior trim is in poor condition. Paint failure and wood deterioration are typical (*Re: Figure 146 and Figure 147*).

The bay windows on the south elevation of the Shoo Fly are in fair condition. Two broken panes were noted. Minor paint deterioration and wood weathering were observed on both windows.

Recommendations:

- Rehabilitate the existing windows. (Serious) Follow guidelines in the National Park Service's Preservation Brief 9: The Repair of Historic Wood Windows. Rehabilitation should include the following:
  - Install new components where original components are missing or severely deteriorated.
  - Apply epoxy consolidation and fill, where wood rehabilitation is possible. It is an important preservation consideration to retain as much of the original material of the building as possible.
  - Secure window frames in masonry openings. Seal joints around each window with a high quality elastomeric sealant on the exterior.
  - Scrape off loose window putty material and replace window putty where necessary. Match existing composition and color as closely as possible. Replace broken panes to match existing.
  - After all repairs have been completed, remove all existing loose paint; sand substrates smooth, repair with epoxy consolidant where necessary, and prime and repaint. All wood surfaces should be primed with a high quality oil-based wood primer and then top coated with two coats of acrylic latex or oil-alkyd paint. Investigation into the original paint scheme of the building should be conducted prior to selecting a new paint scheme. It is desirable to reproduce the original paint scheme if it can be determined. (Serious)
- Weather-stripping the windows would reduce air infiltration and improve thermal comfort in the building. The installation of metal weather-stripping in the jamb and window channels is recommended. Weather-stripping should not detract from the historic appearance of the windows. (Serious)
- Installation of interior storm windows would reduce air infiltration and improve thermal comfort in the building. The installation of interior storm windows should be accomplished in a manner that is sensitive to the historic character of the building and has minimal impact on the extant original materials. (Serious)
- Remove masonry infill at window opening at the upper level of the theatre section and install a historically appropriate replacement window. (Minor)





*Figure 139: Exterior view of typical east-facing window at the upper level of the Shoo Fly section of the building.*



*Figure 140: Interior view of typical upper level window from the mezzanine.*



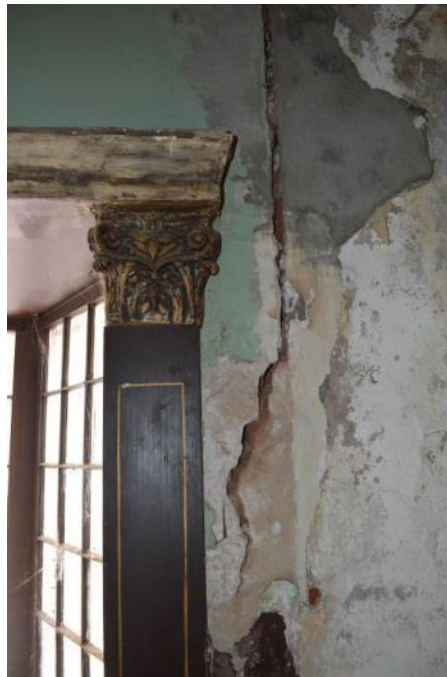
*Figure 141: Interior view of three east facing windows in the upper level of the Shoo Fly.*



*Figure 142: Exterior view of typical window at the upper level of the Shoo Fly section of the building.*



*Figure 143: Interior view of bay window on the south elevation of the Shoo Fly section of the building.*



*Figure 144: Detail view of interior trim at bay window on the south elevation of the Shoo Fly section of the building.*



*Figure 145: Out of plane window on the east elevation of the theatre section of the building.*



*Figure 146: Detail view of interior and exterior wood trim at upper level theatre windows.*





*Figure 147: Overall view of typical trim at upper level windows along the east elevation of the theatre.*

### **3.6 INTERIOR FINISHES**

#### **3.6.1 Wall Finish Materials**

Throughout the lower level of the theatre section of the building, the interior bearing walls are masonry (*Re: Figure 148*). New partition walls and temporary wood shoring has been partially constructed throughout this section of the building. These walls are unfinished, and many consist only of wood framing members (*Re: Figure 149*). The restrooms at the rear of the lower level of the Shoo Fly have wood framing with no wall finishes.

The walls throughout the theatre space are finished with painted plaster applied to brick masonry. In some sections of the walls there are decorative patterns painted onto the wall surface. These may have been applied when the theatre was prepared for filming a movie in the 1970s. The precise date of these paintings is unknown. The walls in the stage area are unfinished concrete in the lower section and concrete unit masonry in the upper section of the walls (*Re: Figure 150*). The walls in the Shoo Fly at the south end of the upper level are also finished with painted plaster applied to brick masonry. In the Shoo Fly there is evidence of removal of one interior partition wall (*Re: Figure 151*). Above the door in the west elevation of the Shoo Fly there is a section of layered interior finishes (*Re: Figure 152*). These layers of finishes include paint and wallpaper.

The exterior walls in the mezzanine are finished with painted plaster applied directly to the brick exterior walls. The south wall of the mezzanine level is exposed brick with visible evidence of roof framing from a previous building (*Re: Figure 153*). The interior partition walls in the mezzanine are constructed of wood framing and finished with painted gypsum board.

#### Condition:

The walls in the lower level of the theatre section of the building are in poor condition. The wood frame partition walls are not original and appear to have been installed to increase support for the existing structure. The masonry bearing walls have extensive plaster delamination and are exhibiting moisture damage and deterioration. The south wall of the theatre section of the building is in very poor condition. At the east end, the wall is separating from the east masonry wall of the building. In addition, roof leaks above have led to extensive moisture infiltration which has resulted in the growth of moss and mold on the wall surface (*Re: Figure 154*).

The concrete walls in the stage and fly space are in fair condition. Water staining is visible on the interior face of the walls.

Throughout the auditorium, extensive paint and plaster damage is visible along the north and south walls. Along the north wall, there is extensive plaster delamination (*Re: Figure 155*). Where the plaster has delaminated, the brick masonry is in poor condition. Sections of brick are crumbling and powdering and sections of mortar are missing. To the west of the opening between the auditorium and the Shoo Fly, there is extensive damage to the plaster in the upper section of the wall. In the auditorium, the non-destructive moisture meter was used where extensive paint and plaster damaged was noted. In all areas, the walls read dry.

At the south end of the women's room, there is a crack in the exterior wall (*Re: Figure 156*). This crack is exhibiting out-of-plane movement which is indicative of the movement noted in the east exterior wall. In addition there is extensive water staining and plaster damage below the window sills

in the east wall of the women's room.

There are two large diagonal cracks in the south wall of the storage room (*Re: Figure 157 and Figure 158*). These two cracks each measure up to 2 inches wide. In addition to the large cracks, water staining and plaster damage are typical. Where the masonry is exposed, sections of missing mortar are visible. These cracks are due to movement of the east wall of the building.

A non-destructive moisture meter was used throughout the building to establish moisture levels in the exterior walls, particularly where extensive plaster damage and water staining is visible. In the men's room, the wall is wet from the north window to the north corner of the room. The exterior wall read as dry between the windows and from the south window to the south corner of the room. In the women's room, the exterior wall is wet. The wettest section of the wall is at the south end of the room. In this area, there is extensive paint and plaster damage due to water infiltration. In addition, the masonry is powdering due to a high level of moisture in the exterior wall. The moisture in the wall is a result of water infiltration at the top of the wall as well as water infiltration at deteriorating joints and cracks.

Throughout the Shoo Fly, water infiltration is evident. The north wall was coated in ice at the time of the January 2016 site visit. This is indicative of an on-going roof leak. During warmer weather, water was noted running down the face of the wall, pooling on the floor of the Shoo Fly. Above the door opening on the west elevation, there is a section of missing brick.

The plaster walls throughout the mezzanine are in poor condition. The plaster is water damaged with sections delaminating and large areas of paint peeling. Where plaster is extant, cracks are typical. When this area was evaluated with a non-destructive moisture meter, it was generally damp throughout.

#### Recommendations:

- After all water intrusion repair work has been completed, rehabilitate damaged areas of plaster and paint to match existing. Follow the guidelines established in the National Park Service's Preservation Brief 21: Repairing Historic Flat Plaster – Wall and Ceilings. Damaged areas of plaster include deteriorated, delaminated, and cracked plaster surfaces. (Serious) Rehabilitation of the deteriorated plaster should include the following:
  - For severely damaged areas, remove of all loose plaster down to the solid substrate and re-plaster.
  - Rehabilitate brick masonry substrate where required.
  - Rake out minor cracks in the existing plaster and patch with patching material.
  - Fill holes, dimples and other uneven surfaces with patching material.
  - Texture, prime, and paint the patched areas in historically appropriate colors.
  - All plaster repairs should replicate the original surface finish and scoring pattern of adjacent surfaces. (Serious)
- Remove plaster from the east wall of the mezzanine to allow for masonry rehabilitation including repointing and crack repairs. Upon completion of masonry repairs, reinstall plaster on interior surfaces. (Critical)
- Upon determination of a use for the building and final design for interior layout, remove wood frame partitions in the lower level. Install partition walls to align with the new use for the building. (Minor)

- Rehabilitate interior masonry bearing walls per recommendations in Section 3.2.



*Figure 148: Detail view of interior masonry bearing wall between the theatre section of the building and the Shoo Fly section of the building.*



*Figure 149: Wood shoring and framing for lower level partition walls.*





*Figure 150: Overall view of plaster walls in the main theatre space and concrete / CMU walls in the stage.*



*Figure 151: Location of wall removed in the Shoo Fly section of the building.*



*Figure 152: Area of layered finishes at the west wall of the Shoo Fly space.*



*Figure 153: South wall of the mezzanine showing location of previous roof and ceiling framing locations.*





*Figure 154: Overall view of moss and mold growth on the south wall of the theatre section of the building.*



*Figure 155: Area of plaster delamination at the northwest corner of the theatre.*



*Figure 156: Overall view of east wall in the women's restroom. Note water damaged plaster below the window. Also note crack in the corner of the room.*



*Figure 157: Large crack in the storage room to the south of the women's room.*





*Figure 158: Large crack in the south wall of the storage room to the south of the women's restroom.*

### 3.6.2 Ceiling Finish Materials

The original ceilings throughout the lower level of the building have been removed and currently consist of unfinished exposed framing (*Re: Figure 159*). In the north section of the building, remnants of plaster on wood lath remain. The restrooms at the rear of the lower section of the Shoo Fly have exposed wood framing at the ceiling.

Throughout the theatre space, the ceiling consists of painted plaster. This finish was installed at an unknown date. To the east of the stage, the ceiling has a concentric circle pattern, designed to house the stage lights (*Re: Figure 160*). Above the audience area, the ceiling is designed to frame a feature light fixture (*Re: Figure 161*).

On the upper level of the building, the ceiling in the Shoo Fly area consists of exposed wood framing. Evidence of plaster and wood lath is visible on the framing components.

Above the mezzanine level the ceiling is finished with painted gypsum board (*Re: Figure 162*). The men's and women's restrooms beneath the mezzanine also have painted gypsum board ceilings.

#### Condition:

Throughout the building, most of the original ceiling finishes have been removed, leaving wood framing exposed. Where finishes are extant in the theatre space, the gypsum board is in fair condition. Water damage and mold are visible on the ceiling to the east of the stage (*Re: Figure 163*). The ceiling in the mezzanine level is in fair condition. There are areas of water damage as well as openings that have been cut through the finish. The men's and women's restroom ceilings are in fair condition with minor paint and plaster damage and deterioration including minor cracking and areas of paint peeling. In the storage room to the south of the women's restroom, the gypsum

board is unfinished.

Recommendations:

- After all water intrusion repair work has been completed, repair damaged areas of plaster and paint to match existing original surfaces. Follow the guidelines established in the National Park Service's Preservation Brief 21: Repairing Historic Flat Plaster – Wall and Ceilings. Plaster damage throughout the building includes deterioration, delamination, and cracking. (Serious) Repair of the deteriorated plaster can take several approaches including the following:
  - Remove severely damaged plaster down to the solid basecoats or lath, and then re-plaster.
  - Rake out and patch minor cracks with patching material.
  - Fill holes, dimples and other uneven surfaces with patching material.
  - Texture, prime, and paint the patched areas in historically appropriate colors.
- Where ceiling finishes have been removed, appropriate finishes should be installed when any required structural repairs in the area have been completed. Appropriate materials may include painted plaster or gypsum board, depending on the use of the space, desired finished appearance, and funding available. (Serious)
- Remove mold from the gypsum board in the main theatre space. (Critical)
- Patch gypsum board ceiling above the mezzanine including in the men's and women's restrooms and the storage room. Prep, prime, and paint the ceiling to attain a uniform appearance. (Minor)



*Figure 159: Overall view of exposed wood framing typical throughout the first floor.*



*Figure 160: Overall view of theatre ceiling.*



*Figure 161: Overall view of theatre ceiling.*



*Figure 162: Detail view of ceiling above the mezzanine.*



*Figure 163: Detail view of water damage and mold at theatre ceiling.*



### 3.6.3 Floor Finish Materials

Throughout the north section of the lower level of the building the floor is exposed concrete. Sections of concrete have been removed, presumably in preparation for future construction activities. Where these sections have been removed, the concrete slab is approximately 4 inches thick. In the south section of the lower level, the floor is dirt. Joist pockets are visible along the north and south walls, indicating that the original floor framing has been removed. The floor would have been located approximately twelve inches above grade based on the location of the joists. Historically, this flooring would have been wood as seen in historic photographs (*Re: Figure 186*). The flooring in the restrooms at the rear of the lower level of the Shoo Fly is not extant.

On the upper level of the building the finish flooring in the Shoo Fly is tongue and groove wood flooring.

Throughout the theatre, the flooring is tongue and groove wood flooring. The boards measure approximately 2 ¼ inches wide. This flooring may have been installed when the building was in use as a gymnasium (*Re: Figure 166*). At the bottom of the stairs to the mezzanine there is red carpet which was installed at an unknown date (*Re: Figure 167*). This carpet continues up the stair.

The men's room has medium stained wood flooring laid diagonally. The women's room has similar flooring. In the women's room, the diagonally laid flooring stops at the wood framed partition wall, where it switches to being laid straight from north to south. The diagonally laid flooring continues in the storage room at the south end of the women's room. In the storage room, the flooring stops approximately 8 inches short of the south masonry wall, leaving the joist ends exposed (*Re: Figure 168*).

Throughout the mezzanine the floor is covered with plywood laid directly on the floor joists (*Re: Figure 169*). The original floor was likely wood given the date of construction of the building.

#### Condition:

The concrete slab on grade throughout the north section of the lower level is in fair condition. Sections of the slab were removed at an unknown date, presumably in preparation for construction activities.

On the upper level of the building, the floor in the Shoo Fly is in poor condition. The wood flooring is buckling as a result of water infiltration and damage. Given the water damage sustained by the wood flooring it is unlikely that the flooring can be salvaged.

The wood flooring in the theatre is in fair condition. Areas of minor damage, including scratches and small gouges, are visible throughout the floor. The flooring in the men's and women's rooms is also in fair condition where extant. Where extant, the flooring has small scratches and gouges. However, much of the flooring is no longer extant.

Throughout the mezzanine, the finish floor is no longer extant.

Recommendations:

- Replace flooring where finish material is missing or severely damaged. Replacement flooring should be historically appropriate such as tongue and groove wood flooring. (Serious)
- Replace carpet on the stairs and at the base of the stairs with appropriate flooring materials. Depending on the use of the space, carpet may be appropriate in these areas. (Serious)
- Install flooring materials where finishes have been removed in the lower level of the building. Finish selection should be based on the anticipated use of the space as well as the historic character of the building. (Serious)
- Rehabilitate existing flooring where possible. Rehabilitation should include re-finishing historic wood flooring in spaces such as the main theatre space and where flooring is extant in the men's and women's restrooms. (Serious)



*Figure 164: Concrete floor in the lower level of the building. Note section of concrete has been removed, presumably in preparation for construction activities.*



*Figure 165: Detail view of wood flooring in the Shoo Fly section of the building.*



*Figure 166: Detail view of wood flooring at the east end of the theatre space. Note flooring transitions from straight laid wood flooring to diagonal wood flooring.*



*Figure 167: Detail view of wood flooring and red carpet at the east end of the theatre.*



*Figure 168: Exposed joist ends in the storage room adjacent to the women's restroom.*





*Figure 169: Overall view of mezzanine floor.*

### 3.6.4 Interior Doors and Hardware

There are no extant interior doors in the lower level of the building. There are three extant interior doors on the upper level of the building. The date(s) of installation of these doors is unknown. They are not believed to be original to the building. Additional doors may be present in the inaccessible area at the northeast corner of the building.

The door into the women's room on the upper level measures 3 feet by 6 feet 8 inches by 1 ¾ inches. The door is a painted stile and rail wood door with eight raised panels in a two by four configuration. Hardware for the door includes two flat tipped hinges. Evidence of a lockset is visible; however, no lockset is extant on the door. On the theatre side of the opening there is painted wood casing with plinth blocks and upper corner blocks (*Re: Figure 170*). This trim may have been salvaged from another historic building and installed in this location. On the restroom side, no trim is extant. It is unknown if trim ever existed in this location.

The door from the women's room into the storage room is a modern flush wood door which measures 3 feet by 6 feet 8 inches by 1 3/8 inches. The door opening has painted 3 ½ inch wide wood casing at the head and jambs.

The door into the men's room is a four panel stile and rail painted wood door. On the restroom side of the opening, there is profiled wood casing at the jambs. At the head, there is painted wood crown molding above painted flat wood trim (*Re: Figure 171*). Hardware for the door includes hinges, a deadbolt, and a lockset.

#### Condition:

The doors into the men's and women's restrooms are in fair condition. Both of these doors have paint damage and scratches and marks in the wood surfaces. Each of the doors is missing components of the hardware. In addition, the trim is missing on the restroom side of the women's room door opening.

The storage room door is in fair condition with minor areas of damage such as small scratches and nicks in the finished surface.

#### Recommendations:

- Replace existing interior doors with historically appropriate doors. (Minor)
- When the building is rehabilitated for re-use, install doors as required throughout the building. Doors should complement the historic character of the building. (Minor)
- After the rehabilitation is complete, perform routine maintenance on operable components of hardware. Lubricate internal lockset components and hinges on a semi-annual basis. Always remove excess lubricants from the exposed surfaces of hardware. Keep hardware component free from paint. Remove excessive buildups of dirt and debris. (Routine)



*Figure 170: View of the door opening from the main theatre space into the women's restroom. This trim may have been salvaged from another historic building and installed in this location.*



*Figure 171: Overall view of door into the men's restroom.*

### 3.6.5 Interior Windows and Hardware

There are no interior windows in the building. Installation of interior windows is not recommended.

### 3.6.6 Interior Trim and Built-ins

At the northeast corner of the building there is a stair which provides access from the lower level to the upper level (*Re: Figure 172*). The stair is of modern wood frame construction and does not match the original configuration of the stair in the building.

In the men's and women's rooms there is a nine inch high painted wood base. In the men's restroom there are metal toilet partitions (*Re: Figure 173*).

In the auditorium space there is a wood paneled wainscot at the east end of the south wall (*Re: Figure 174*). The wainscot extends to approximately 3 feet 4 inches above the finished floor. At the east end of the wall, the wainscot projects approximately 13 inches out from the face of the masonry wall. Along the top of the projection, there is a wood cap. Near the stairs up to the Shoo Fly, the wainscot steps back toward the masonry wall, only projecting out 8 inches. The wainscot then continues along the wall to the end of the stairs up to the Shoo Fly. The wainscot also continues at the northeast corner of the theatre. In this section of the building, the wainscot wraps around the corner, high above the stair (*Re: Figure 175*). This is indicative of the original location of the floor in this section of the building, prior to construction of the extant modern stair in this area.

Along the south wall of the theatre there is a set of stairs from the theatre up to the Shoo Fly (*Re: Figure 176*). The stairs from the theatre to the Shoo Fly are covered with carpet. The treads are each 11 ½ inches, the risers are 6 ¾ inches. Along the north side of the stairs there is a wood railing located approximately 2 feet 6 inches above the treads. At the lowest end of the railing there is a newel post. Similar newel posts are located at the upper end of the railing and at the corners of the upper landing. Along the railing there are turned wood balusters. The railing continues along the north wall of the Shoo Fly (*Re: Figure 177*). The date of installation of these interior features is unknown.

In the Shoo Fly there is a painted wood picture rail along the north and east walls (*Re: Figure 178*). At the west end of the Shoo Fly there is built-in wood casework (*Re: Figure 179*). This casework includes eight cabinets with raised panel doors along the lower section of casework. Above each cabinet is a drawer. Above the drawers is a wood countertop. Above the countertop there is a series of mirrors. At each end of the mirrors there is a cabinet. The casework extends from the floor to the ceiling. The date of installation of the casework is unknown. Along the south wall of the Shoo Fly, there is decorative plater work around the bay window openings. This plasterwork is not original and was likely installed when the bay windows were installed (*Re: Figure 142*).

At the west end of the theatre there is a stage (*Re: Figure 180*). The stage is constructed with wood framing with a plywood surface. There is a set of wood stairs to access the stage at the north end of the stage projection.

At the east end of the theatre there are stairs up to the mezzanine level (*Re: Figure 181*). These stairs are constructed of wood. The stairs are carpeted. To either side of the stairs there is a wood railing. The wood railing consists of a wood handrail with turned wood balusters below.



Along the edge of the mezzanine there is a painted wood railing. This railing is a continuation of the railing at the stair from the theatre space below. A secondary guardrail railing has been constructed to the inside of the railing. This inner guardrail is constructed of double 2x4 painted wood posts and with a rectangular wood rail along the top of the posts (*Re: Figure 182*).

Condition:

The stair in the northeast corner of the building is not original or consistent with the historic character of the interior. It does not complement the architecture of the building (*Re: Figure 172*). The stair is of modern construction and detailing, and blocks one of the entrances to the building.

In the women's room, the wood base is pulling away from the exterior wall. The remaining toilet partitions in the men's room are in poor condition with missing components and deteriorated partitions remaining in place. The extant partitions are not historic.

The wainscot in the theatre space is in fair condition. There are minor areas of damage including scratches and finish deterioration.

The stairs from the theatre to the mezzanine and the theatre to the Shoo Fly are in good condition. The carpet on the stairs is in fair condition, being worn and stained. The railings along the stairs and along the edge of the mezzanine are in fair condition. The railings have minor damage and finish wear. The secondary railing along the mezzanine edge is not historically appropriate. However, a modification to the railing is required to meet code requirements for the railing height.

The wood trim and casework in the Shoo Fly is in poor condition. The wood is heavily water damaged due to on-going water infiltration at the roof. This water infiltration has resulted in finish failure on the wood trim and built-ins as well as deterioration of the wood components. Sections of the picture rail are missing.

The stage is in good condition.

Recommendations:

- Remove the modern stair in the northeast corner of the building. Construct a historically appropriate stair in a location that works with the existing architecture of the building and functions well for the proposed future use of the building. (Serious)
- Remove non-historic toilet partitions. When new restrooms are established in the building, install appropriate toilet partitions. (Minor)
- Re-secure wood base trim in the women's restroom. (Minor)
- Rehabilitate wood wainscot in the theatre space. Rehabilitation should include refinishing the wood components. (Minor)
- Replace carpeting on the stairs from the theatre to the mezzanine and the theatre to the Shoo Fly. (Minor)
- Rehabilitate wood trim in the Shoo Fly. Rehabilitation should include replacement of missing sections and repair of extant sections which are damaged and deteriorated. (Minor)
- Rehabilitate wood casework in the Shoo Fly. Rehabilitation should include replacement of missing and damaged wood components, reconstruction of missing sections, and refinishing

of the casework. (Minor)

- Remove the secondary railing along the mezzanine. Modify the railing to meet code requirements for height. (Minor)
- Rehabilitate mezzanine and Shoo Fly railings. Rehabilitation should include:
  - Remove extant deteriorated finishes.
  - Repair wood components where required.
  - Replace missing and damaged components.
  - Re-finish wood components.
  - Alternatively, if documentation of the historic interior appearance is located, replace railings with historically appropriate railings.



*Figure 172: Overall view of modern stair in the northeast corner of the building.*



*Figure 173: Toilet partitions in the men's restroom.*



*Figure 174: Overall view of wood wainscot at the southeast corner of the theatre.*



*Figure 175: Wood wainscot above the stairs in the northeast corner of the theater.*



*Figure 176: Stairs from the theatre to the Shoo Fly.*





*Figure 177: Overall view of railing between the Shoo Fly and the theatre space.*



*Figure 178: Detail view of painted wood picture rail in the Shoo Fly.*



*Figure 179: Wood casework at the west end of the Shoo Fly.*



*Figure 180: Overall view of the stage at the west end of the theatre.*



*Figure 181: Side view of stair and handrail from the theatre space to the mezzanine.*



*Figure 182: Railing typical along the edge of the mezzanine.*



### **3.7 MECHANICAL SYSTEMS**

#### **3.7.1 Heating, Ventilating and Air Conditioning – General**

The building's original heating and ventilation system has largely been removed by previous, partially completed, renovation projects. There is some residual evidence of a steam heating system, although the location of a steam boiler could not be ascertained. A number of roof mounted gravity ventilators are visible on the original flat roof in a historic photograph of the building, taken before the current pitched roof structure was added. Several of these ventilators are still present in their original locations in the attic.

Historic photographs of the building indicate the presence of as many as six separate chimneys, implying the existence of distributed heating appliances such as individual stoves or small boilers. A larger chimney existed near the back of the building adjacent to the location of the demolished kitchen, possibly indicative of a central boiler location in what is now identified at the "Pit" on the lower level. One historic photograph shows the interior of the ground floor of the "Shoo-Fly" section of the building with a cast iron stove located in the middle of the space. (*Re: Figure 186.*)

There is no evidence of the prior presence of a ventilation system or air conditioning.

#### **3.7.2 Heating Systems**

Residual evidence suggests that the building was previously heated with a combination of a steam boiler with cast iron radiators and individual space heaters, such as cast iron stoves. The location of a central heating plant or boiler could not be determined from the current conditions. A historic preservation survey, planning and technical report completed by A-E Design Associates in 1996 does not mention the existence of a heating system in the building. A set of building plans completed by the Mountain Design Group in 1999 does not indicate the presence of a mechanical room.

#### Recommendations:

- A contemporary new use for the building will require the design and installation of a new central heating and ventilation system that complies with current building code requirements. A mechanical air conditioning system may be required if the building occupancy exceeds that which could be accommodated by ventilation alone. (Serious)  
Potential locations for mechanical equipment include:
  - The roof top of the "Shoo-fly" building, provided the roof structure is reinforced to accommodate the weight of mechanical equipment and equipment placement does not adversely affect the historic character of the building's exterior.
  - In the interstitial attic space between the original roof of the theater building and the current pitched roof, provided the original structure can support the weight of mechanical equipment and the equipment is small enough to allow for installation in the confined attic space.
  - In the "pit" area of the lower level provided access to the outside for intake and exhaust is provided.
- The design of a new mechanical system should follow the recommendations of Preservation Brief 24: Heating, Ventilating, and Cooling Historic Buildings: Problems and Recommended Approaches.



### 3.7.3 Ventilation Systems

The building has no existing ventilation system.

#### Recommendations:

- See above recommendations regarding a new heating, ventilation and air conditioning system.

### 3.7.4 Water Service, Plumbing and Sewer Utilities

Sanitary sewer service is provided by the Black Hawk / Central City Sanitation District. A sanitary sewer line is located in the Nevada Street right-of-way. Domestic water service is provided by the Central City Water Department. Domestic water service is available in the Nevada Street right-of-way. There is no apparent existing connection to the available domestic water utility. The presence of some exposed 4-inch diameter, cast iron, waste piping (*Re: Figure 183*) implies that there is an extant connection to the sanitary sewer in Nevada Street.

There is one men's toilet room and one women's toilet room located at the east end of the theatre space. The men's toilet room includes two lavatories, one trough style urinal (*Re: Figure 184*) and rough-ins for two non-extant water closets. The women's toilet room does not have any existing fixtures and partially complete rough-ins.

At the west end of the lower level of the Shoo Fly section of the building there is one men's toilet room and one women's toilet room. The men's toilet room includes a water closet and wall-hung urinal (*Re: Figure 185*). The women's room toilet includes a water closet and a rough-in for a lavatory.

A variety of galvanized steel piping and cast iron drain piping was observed in the building. Most of this piping appeared to be disconnected fragments of an existing plumbing system and partially completed contemporary alterations to that system.

#### Condition:

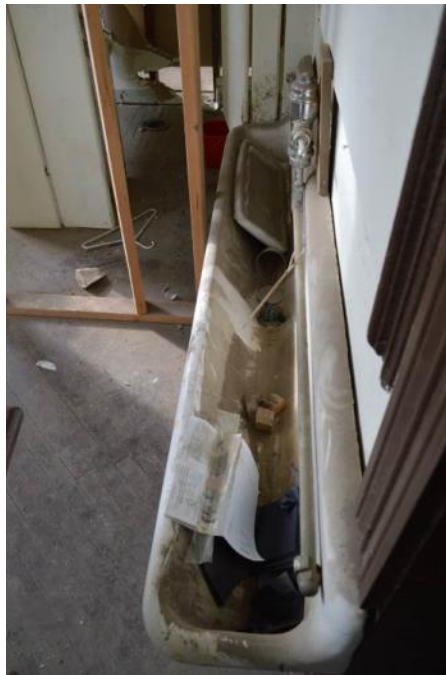
The existing plumbing system is in poor, non-functioning condition. The condition of any existing water and sanitary sewer connections is uncertain and should be considered to be in poor and probably non-functioning condition.

#### Recommendations:

- The rehabilitation of the building will require the design and installation of a new code-compliant plumbing system. Public restrooms of the quantity required to satisfy the reuse occupancy of the building will be required. None of the existing components of the plumbing system should be assumed to be reusable. (Serious)



*Figure 183: Extant piping in the Shoo Fly section of the building.*



*Figure 184: Plumbing fixture extant in the men's room in the upper level of the theatre section of the building.*



*Figure 185: Plumbing fixtures in the men's room in the lower level of the Shoo Fly.*

### 3.7.5 Natural Gas Service

There was no evidence that natural gas service had ever been connected to the building.

#### Recommendations:

- A new natural gas connection of adequate size will be required for a new central heating, ventilation and air conditioning system. (Serious)

### 3.7.6 Fire Suppression - Sprinklers

A fire suppression system has been installed in the theater space in the mezzanine areas. Elements of the fire line entry station are located on the back wall of the fly space in the theater. A Siamese fire department connection is located in the upper back wall of the fly space in Pine Street. Other areas of the building do not appear to have been protected with a fire sprinkler system.

#### Condition:

The existing fire suppression system is non-functional. Piping at the fire line entry equipment has been disconnected. Other visible components of the system, such as the sprinkler heads in the mezzanine area, appear to be antiquated and no longer compliant with current codes.

#### Recommendations:

- Depending upon the future use of the building, a code-compliant fire protection system is recommended. It would be prudent to install a fire protection system in the entire building as part of building rehabilitation project. (Serious)



Figure 186: Interior of street level of "Shoo-fly" saloon, showing cast iron stove for heat.

### 3.8 ELECTRICAL SYSTEMS

#### 3.8.1 Electrical Service and Panels

Electrical service enters the building on the north elevation, at the east end of the north wall of the fly space (Re: Figure 187). An electrical meter is located on the exterior of the north wall of the fly space on Pine Street. The main electrical panels are located on the east wall of the stage/fly space. The electrical service to the building appears to be 400 amp, 3-phase, 120/208 volt service. The electrical service panels appear to consist of several fused disconnect switches. There are two electrical panel boards. Panel A is located on the north wall of the stage/fly space. Panel A is a 225 amp, 3 phase, 42-pole electrical panel, as manufactured by Square D. The panel is protected by a 200 amp, fused disconnect switch. The second electrical panel is located on the ground floor or lower level in the "pit" area. Panel B is a 100 amp, single phase, 16-pole load center, protected by a 100 amp, fused disconnect switch. (Re: Figure 188.)

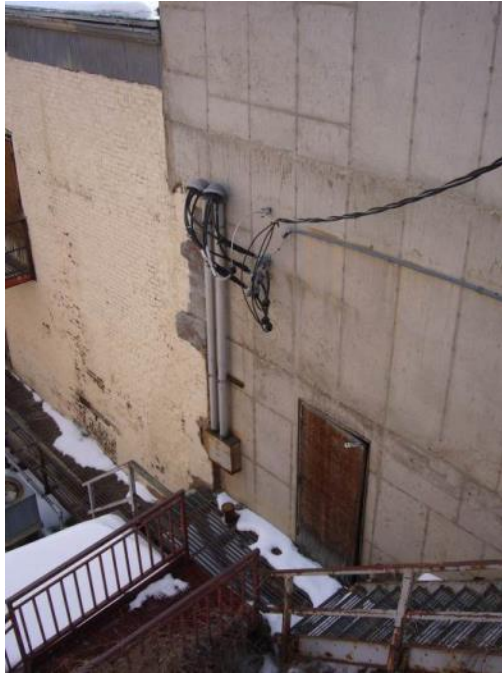
#### Condition:

The existing electrical service entry, switchgear and panelboards appear to be in fair but serviceable condition. Some of the circuits in the panelboards are not identified properly. It is not certain that the existing switchgear would comply with current building and electrical codes when the building is rehabilitated.

#### Recommendations:

- A thorough evaluation of the existing electrical service entry, distribution equipment and panelboards by a qualified electrical engineer is recommended to determine if any of these components can be reincorporated into a complete building rehabilitation. If mechanical air conditioning is required or desired, the existing 400 amp service is probably not adequate. (Critical)
- The complete replacement of the electrical service with new equipment is recommended as part of a complete building rehabilitation. (Serious)





*Figure 187: Electrical service entry on the north elevation.*



*Figure 188: Main electrical service and disconnects.*

### 3.8.2 Electrical Distribution and Branch Circuit Wiring

A variety of electrical distribution was observed throughout the building. Some branch circuit wiring is in rigid conduit (EMT). Some is in flexible armored cable. Much of the extant electrical wiring is distributed haphazardly. In general, the electrical distribution and branch circuit wiring is incomplete beyond the two panelboards.

#### Condition:

The existing electrical distribution and branch circuit wiring appears to be in fair physical condition but the incomplete nature of the installation is highly suspect. Therefore, the overall condition of the existing electrical distribution should be considered to be poor. In 2005, Colorado Code Consulting conducted an on-site investigation of the building. During that investigation a number of electrical conditions were observed that were of serious concern. Some of the electrical distribution and devices were damaged. Colorado Code Consulting indicated that these conditions should be considered hazardous. The observations conducted during this current assessment did not find that those hazardous conditions have been addressed.

#### Recommendations:

- All existing electrical distribution from the panelboards to final terminations should be replaced with new conduit, conductors and terminal devices. Existing rigid conduit (EMT) that is intact and in good physical condition can be reused if compliant with current electrical code requirements. (Serious)

### 3.8.3 Lighting

#### *3.8.3.1 Exterior Lighting*

Along the east elevation there are eight recessed light fixtures in the wood cornice along the north section of the building (*Re: Figure 189*). At the south entrance in the north section of the building there is conduit visible above the door opening (*Re: Figure 190*). There is no extant light fixture in this location, but presumably there was a light fixture in this location previously. The dates of installation of the light fixtures throughout the building are unknown.

#### Condition:

The functionality of the exterior light fixtures is unknown. The fixtures are not historic; no exterior light fixtures are visible in historic photographs. The existing exterior lighting should be considered to be in poor condition.

#### Recommendations:

- Install historically appropriate exterior light fixtures at building entrances and elsewhere as appropriate. Fixtures should be simple in design and should not detract from the historic character of the building or damage any extant original finishes. (Serious)



*Figure 189: Exterior lights along the east elevation cornice.*



*Figure 190: Conduit above exterior door opening, indicating location of a previous light fixture.*

### 3.8.3.2 Interior Lighting

Only a few areas in the building have extant interior light fixtures. The fixtures that do exist are in poor to fair condition. (Re: Figure 191, Figure 192, and Figure 193.) Exit light fixtures and emergency egress lighting were also observed. (Re: Figure 194.)

#### Condition:

The existing lighting fixtures are in poor condition. Most areas of the building do not have light fixtures. Fixtures that do exist are damaged, partially installed or in poor to fair condition.

#### Recommendations:

- A complete redesign of the interior lighting is recommended as part of the rehabilitation of the building. New lighting should be chosen to accommodate the new uses of the building, for energy efficiency and for compatibility with the historic character of the building. (Serious)
- Preservation Brief 18: Rehabilitating Interiors in Historic Buildings: Identifying and Preserving Character-Defining Elements should be used to guide the selection of new lighting fixtures.



*Figure 191: Ceiling mounted light fixture in the lower level of the theatre section of the building.*





*Figure 192: Ceiling mounted chandelier in the theatre space.*



*Figure 193: Wall sconce on the north wall of the mezzanine.*



*Figure 194: Illuminated exit sign and emergency light fixture above the south door from the Shoo Fly.*

### 3.8.4 Fire Detection System

The building does not currently have a fire detection system.

#### Recommendations:

- Installation of a fire detection system is recommended. The system should be installed in such a manner that it minimizes the impact to any extant historic finishes and the historic character of the building. (Serious)

### 3.8.5 Security Alarm System

The building does not currently have a security alarm system.

#### Recommendations:

- If a security alarm system is installed in the building in the future, it should be installed in such a manner that it minimizes the impact to any extant historic finishes and the historic character of the building. (Routine)

## 4.0 ANALYSIS AND COMPLIANCE

### 4.1 *Hazardous Materials – Summary*

A specific hazardous materials survey was not included as part of the scope of this assessment.

Since the building was constructed prior to the discontinuation of the manufacture of lead-based paints, it would be prudent to assume that lead-based paint is present. The highest likelihood is that lead-based primers and finish coats were used on interior plastered surfaces, and painted interior woodwork and trim. Interior woodwork and trim finished with transparent finishes like varnish, are probably not lead-based. However, minor traces of lead may be present due to the use of driers in oil based finishes. There is a high likelihood that lead based paint may also be present on exterior painted wood or metal surfaces including windows and trim. Any future maintenance procedures or construction activities that would involve sanding or heating existing interior and exterior paint coatings should take into account the possible presence of lead-based paint. Therefore, any hazardous materials survey should include sampling and testing of existing painted surfaces for the presence of lead-containing coatings.<sup>1</sup> The more recent upper coats of paint are probably lead free.

The use of lead for drain, waste and vent piping was common well into the 1930s. Its presence in the building should be assumed. However, lead piping used for drains does not usually constitute a hazard for the building's occupant. Historically, lead was also used for supply piping, and this would present a hazard if present. Both hot and cold domestic water could be sampled and tested to determine if objectionable lead content is present.

#### Recommendations:

- Hazardous materials surveys to confirm the presence of lead-containing coatings, lead piping and asbestos containing materials should be conducted prior to any planned renovation of alteration and repair project. The survey report should contain recommendations for the abatement of hazardous materials. (Routine)

### 4.2 *Materials Analysis*

No materials analysis was completed as a part of this historic structure assessment. Mortar analysis is recommended prior to repointing for both brick and stone masonry. Replacement and original bricks and stone units should be tested for compatibility. A paint analysis should be performed on both interior and exterior original materials to determine an appropriate early color scheme for the building.

#### Recommendations:

- The following material analyses are recommended prior to or as a part of any future

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<sup>1</sup> *Preservation Briefs: 37, Appropriate Methods for Reducing Lead-Paint Hazards in Historic Buildings* is an excellent guide on dealing with lead-paint issues in older buildings. It is available from the Office of Archeology and Historic Preservation of the Colorado Historical Society.

rehabilitation or alteration project:

- Wood species identification for the following sections of the building:
  - Sample from a trussed girder in the Theatre
- Mortar analysis to determine existing composition and recommended proposed repointing mix designs for repointing and repair of brick and stone masonry. Samples from the following sections of the building should be analyzed:
  - Sample from the brick and stone areas of the Shoo Fly
  - Sample from the façade brick on the Theatre section of the building
- Flat jack testing of the deteriorated brick and stone masonry is recommended to develop an understanding of in situ stress levels and strength of the masonry. There are references to flat jack tests performed by Atkinson-Noland in the 1998 RMMI report. Atkinson-Noland was contacted recently regarding this report and they indicated that they have test values, however, the locations of these tests are only generally indicated in the documentation that they have available in their archive. Some additional new flat jack testing at the deteriorated stone and brick sections is recommended to update the material information which will be used in a future structural analysis and repair design for the masonry walls.
- Non-destructive evaluation (NDE) survey of the existing reinforced concrete walls and CMU is recommended to identify existing reinforcing bar size and spacing. Limited exploratory openings in the walls would be required to confirm the NDE survey results.
- Complete paint color sequence analysis for the following areas:
  - Exterior wood work
  - Exterior masonry

### ***4.3 Zoning Code Compliance***

Once a final use has been established for the building, confirm that all Gilpin County and Central City zoning and use requirements are addressed.

#### Recommendations:

- Review zoning code requirements when use is finalized for the building. (Routine)

### ***4.4 Building Code Compliance***

The Building Code compliance assessment was based on a review of the building during which the building's construction, layout and condition were observed and current physical conditions and problems evaluated. During the on-site observations, the general condition and arrangement of the building's life safety and egress features were reviewed. The purpose of the on-site observations was to compile information regarding the existing conditions to allow an analysis of the existing building and the subsequent identification of serious code compliance deficiencies.

The building code analysis compared existing physical conditions and the current and expected uses of the Belvidere Theatre with the 2006 International Building Code (IBC). The International Building Code suite includes the International Existing Building Code. Although Gilpin County has not adopted the IEBC, it has adopted Chapter 34 of the IBC which also describes existing structure requirements. The IEBC was utilized to analyze compliance of the existing building as it is an elaboration on Chapter 34.

Existing Code Compliance Status: The current IBC chapter 34 "Shall control the alteration, repair,



addition and change of occupancy of existing structures.” In many jurisdictions, existing buildings are generally considered code complying if they comply with the building code that was in force at the time of their construction or subsequent alteration. Two of the most often used triggers that require an Owner to "bring an existing building up to current code" are a proposed change of the occupancy classification of the building or “a proposed renovation that substantially affects the building's structure, fire safety, or emergency egress”. The building, as it stands today, was completed in 1874. The building's original use was as a theatre space, considered today to be an Assembly occupancy.

The IEBC would allow the continued unaltered use of this building, in its current configuration, provided:

- There are no unsafe conditions as described in Section 115 and further defined in Chapter 2 of the IEBC.
- The building meets the minimum standards for existing buildings described in Chapter 34 of the IBC.
- There is no change in building's occupancy classification.
- The building is properly maintained in a safe and sanitary condition.
- Future additions, alterations and repairs conform to the current Building Code.

IEBC - Unsafe Conditions: Chapter 2 defines Unsafe Buildings to mean “Buildings...that is unsanitary or deficient because of inadequate means of egress facilities, inadequate light and ventilation, or that constitutes a fire hazard, or that is otherwise dangerous to human life or the public welfare, or that involves illegal or improper occupancy or inadequate maintenance, shall be deemed an unsafe condition.” There are a number of conditions, such as open stairs connecting multiple stories and a lack of fire detection and suppression systems, which could be declared an unsafe condition by the Fire Department.

The IBC requires that the structural stresses in the existing building structure and its individual structural members not be increased by more than 5 percent due to alterations or additions, unless these increased forces are in compliance with the IBC requirements for new structures. Repairs to structural elements that are found to be deficient should be in accordance with the IBC requirements for new structures. Repairs to the building's structural systems are identified in Section 3.2. Building Structural System.

The IBC also includes miscellaneous requirements pertaining to stairways, railings, guardrails, electrical, mechanical and plumbing systems. Replacement of the mechanical system will be required prior to occupation of the building. Upgrades to the electrical system will also be required. Modifications will be required to bring handrails and guardrails into code compliance. In addition, new code compliant restrooms will be required. Fixture counts for these restrooms will be based on the anticipated occupant load of the building, as established during the design for rehabilitation of the building.

Building Summary:

Building Area (Approximate):

Lower Level:	4,500 SF
Upper Level:	4,500 SF
Mezzanine:	1,333 SF
Total Area:	10,333 SF

Building Height (Approximate):

From top of roof to average grade at perimeter:	30 FT
Number of Stories	2 (plus mezzanine)

Construction Type:

Primary	Type III-B
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Anticipated Occupancy:

Primary:	A-1
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Findings: The building is approximately 10,333 square feet, consisting of two stories plus a mezzanine. The exterior walls are primarily of masonry construction with wood floor structures and wood and steel roof structures. This type of construction is approximately equivalent to what is known as Type III-B construction in the 2006 edition of the IBC. These parameters were used to analyze the existing building conditions as compared with code requirements of the 2006 IBC.

The building meets code requirements for both height and area. At a minimum, the building could be up to 8,500 square feet per floor, 2 stories in height, and 55 feet tall.

The occupant load for the building will need to be calculated once a use for each space is determined. The occupant load for the building will impact exiting requirements, restroom fixture counts, and other requirement improvements to the building.

Recommendations:

- Complete a full building code analysis when a building rehabilitation project is undertaken in preparation for occupation of the building. (Routine)

## ***4.5 Accessibility Compliance***

The Belvidere Theatre building is not currently accessible. There are no designated handicap parking spaces. The entrances to the building are not at grade. Inside the building, there is not an accessible route through the building. As the building does not have an elevator, there is no disabled access to the upper level of the building which includes the main theatre space and the Shoo Fly.

Once a final use is established for the building, accessible parking spaces should be designated in close proximity to an accessible entrance to the building. The accessible entrance should be provided at one of the entry openings on the east elevation. This may be accomplished through renovation of one of the existing entrances. Some of the entrances have been modified from their original appearance and configuration, and could be rehabilitated to more closely appear as they did shortly after the building's construction. Assuming the main theatre space and Shoo Fly are to be used for public assembly, accessibility should be established for the upper floor of the building. This access will include installation of an elevator which would need to provide access to the various floor levels in the building. In addition, ADA compliant restrooms will be required in the building.

### Recommendations:

- Identify accessible parking spaces in close proximity to the accessible entrance to the building.
- Provide an accessible path into and through the building.
- Provide accessible restrooms in the building.
- Install an elevator to provide accessibility to the upper level of the building. Installation of the elevator should be accomplished in such a manner that it does not compromise the historic character or appearance of the building and such that it provides access to all levels of the building.

## 5.0 PRESERVATION PLAN

The Secretary of the Interior's Standards for the Treatment of Historic Properties describe several treatment approaches for historic buildings. The treatment approaches are: preservation, rehabilitation, restoration and reconstruction.

**Preservation** focuses on the maintenance and repair of existing historic materials and repair of existing historic materials and retention of a historic property's form as it has evolved over time. Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity and materials of a historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction. New exterior additions are not within the scope of this treatment; however, the limited and sensitive upgrading of mechanical, electrical and plumbing systems and other code-required work to make properties functional is appropriate within a preservation project.

Preservation is appropriate as a treatment when the property's distinctive materials, features and spaces are essentially intact and thus convey the historic significance without extensive repair or replacement; when depiction at a particular period of time is not appropriate; and when a continuing or new use does not require additions or extensive alterations. Preservation is an appropriate treatment for the exterior as it has remained largely intact since completion in 1957.

**Rehabilitation** acknowledges the need to alter or add to a historic property to meet continuing or changing uses while retaining the property's historic character. Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values. Rehabilitation is appropriate as a treatment when repair and replacement of deteriorated features are necessary; when alterations or additions to the property are planned for a new or continued use; and when its depiction at a particular period of time is not appropriate. Rehabilitation is an appropriate approach for the building considering the potential need to upgrade systems and modify the use of some spaces throughout the complex as outlined in the master plan. The standards for rehabilitation are:

A property will be used as it was historically or be given a new use that requires minimal change to its distinctive materials, features, spaces and spatial relationships.

The historic character of a property will be retained and preserved. The removal of distinctive materials or alteration of features, spaces and spatial relationships that characterize a property will be avoided.

Each property will be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or elements from other historic properties, will not be undertaken.



Changes to a property that have acquired historic significance in their own right will be retained and preserved.

Distinctive materials, features, finishes, and construction techniques or examples of craftsmanship that characterize a property will be preserved.

Deteriorated historic features will be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature will match the old in design, color, texture, and, where possible, materials. Replacement of missing features will be substantiated by documentary and physical evidence.

Chemical or physical treatments, if appropriate, will be undertaken using the gentlest means possible. Treatments that cause damage to historic materials will not be used.

Archaeological resources will be protected and preserved in place. If such resources must be disturbed, mitigation measures will be undertaken.

New additions, exterior alterations, or related new construction will not destroy historic materials, features, and spatial relationships that characterize the property. The new work will be differentiated from the old and will be compatible with the historic materials, features, size, scale and proportion, and massing to protect the integrity of the property and its environment.

New additions and adjacent or related new construction will be undertaken in such a manner that, if removed in the future, the essential form and integrity of the historic property and its environment will be unimpaired.

**Restoration** depicts a property at a particular period of time in its history, while removing evidence of other periods. Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period. The limited and sensitive upgrading of mechanical, electrical, and plumbing systems and other code-required work to make properties functional is appropriate within a restoration project. Restoration is not an appropriate treatment for the entire building, primarily due to economic constraints and the required continued usage of the building's additions over the years.

**Reconstruction** re-creates vanished or non-surviving portions of a property for interpretive purposes. Reconstruction is not an appropriate treatment for the building.

## **5.1 PRIORITIZED WORK PLAN**

The purpose of this preservation plan is to organize the physical repair, maintenance and rehabilitation needs of the building into a prioritized approach that will allow the Owner to anticipate and plan for repair, rehabilitation and major maintenance costs. Each problem condition discovered during the building condition assessment is evaluated and positioned according to its severity and impact on the long term conservation of the building, the safety of its occupants and the continued use of the building. Recommended repair, rehabilitation and maintenance work is prioritized and organized into the following categories according to their relative urgency and importance.

**Critical Deficiencies:** This category includes deficiencies that should be corrected as soon as possible. If repairs are not made immediately serious additional damage to the building or injury to the building's occupants or passers-by may occur. Work which would be classified as critical deficiencies include masonry components which have deteriorated to the point where pieces could fall and injure the building's occupants and/or passers-by, serious active roof leaks that could quickly damage the building or its contents, hazardous electrical conditions, hazardous building egress conditions and the like. Critical building code and related life safety deficiencies are also included in this category.

**Serious Deficiencies:** This category includes deficiencies that should be corrected as soon as possible after all critical deficiencies have been corrected. This category includes work in areas where continuing damage to the building is likely unless the problems are repaired. Serious deficiencies could become critical deficiencies if not corrected in 2 to 4 years. Work which would be classified as serious deficiencies includes repair of roof leaks and conditions likely to result in roof leaks, repair work which will prevent significant and rapid additional deterioration of building components and systems, etc.

**Minor Deficiencies:** This category includes deficiencies that should be corrected but not before all deficiencies in the critical and serious categories has been completed. Minor deficiencies have the potential of becoming serious if not corrected and resolved within the next 5 to 10 years.

**Routine Repair and Maintenance Work:** This category includes repair work that should be done on a routine and continuous basis. If routine repair and maintenance is not completed, building components and systems can deteriorate into critical or serious deficiencies. This category includes repair and maintenance work such as, painting, mechanical system maintenance to boilers, etc., hardware maintenance, roofing and flashing inspections, etc.

**Other Work:** Other work includes work that is not necessary for the preservation of the building but may be desired by the building's occupants. Other work could include work like the restoration of original finishes and features that have been lost due to past renovation work, additional architectural lighting, etc. Other work could also pertain to the preservation of character defining historic elements within the building not necessary for the building's preservation. Other work should not be undertaken until all critical and serious deficiencies have been corrected. Furthermore, it is not wise to defer routine repairs and maintenance in order to pursue other work.

The repair recommendations included in the building condition assessment are further defined, organized and placed in the prioritized work categories below. Work items are arranged in order of

their relative priority. Highest priority items are listed first. Estimated costs are for 2016-2017. Escalation to future years is not included due to uncertainty of actual timing of work. However, construction costs have escalated as much as 10% in any given year. Costs have risen an average of 4.5% per year in the past 10 years. Design fees of 15% are included in the overall project cost estimates. Design fees will be approximately 12% to 18% of the cost of the work depending on the amount of work proposed at one time.

The estimated project costs presented in this assessment and preservation plan were developed using a parameter methodology, based on very preliminary information, to result in a general order of magnitude of probable cost. The individual line items are based on general assumptions and should not be analyzed on a line by line basis.

When reviewing the following estimate of probable construction cost, it should be understood that the preparer of this information has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing. The estimates of probable construction costs provided herein are opinions and are made on the basis of the preparer's qualifications and experience. No warranty is expressed or implied as to the accuracy of such opinions as compared to bid or actual costs.

### **5.1.1 Critical Deficiencies (Immediate Action Required.)**

The following critical deficiencies should be corrected as soon as possible.

- Seal building to pavement joints along the east and west elevations.
- Rehabilitate masonry retaining wall extending south from the southeast corner of the building. Rehabilitation should include:
  - Deconstruction and reconstruction of sections of the wall which are leaning, rotating, and/or bulging.
  - Installation of vertical ties to reinforce the masonry wall.
  - Replacement of missing and severely deteriorated masonry.
- Regrade site as necessary to facilitate proper drainage away from the south elevation of the building.
- Regardless of what overall structural strengthening program is considered or enacted, deteriorated building appendages such as the parapets and cornices would be considered unsafe during seismic/high wind events and should be structurally strengthened. This will likely entail structural reinforcement of the URM parapets and cornice as well as connecting the existing walls to the existing floor and roof diaphragms with additional new tie rods.
- Further investigation should be performed regarding the walls of the Shoo Fly. The study purposed would be to develop a clear treatment for the leaning masonry walls that are founded on the decaying wood plate at the top of the foundation walls. Exploratory openings will be required to determine the embedment depth of the wood element. It is very possible that the wood extends through the full width of the wall. Ultimately this decaying wood should be removed in sections and replaced with new mortar or grout that provides adequate support for the bearing walls above. There likely is no practical method to reverse the lean in the walls above the foundation without further damaging the leaning walls.
  - A likely repair methodology for the embedded decaying board would include temporary lateral bracing of the wall; removing alternating 2 to 3 foot lengths of the decayed wood from one side of the wall; installing new grout; and then repeating this

procedure on the other side of the wall. The remaining alternating sections of wood would then be removed from each face of the wall in a similar manner. Because some additional shifting and cracking of the brick could occur during this process, all repointing crack repairs should occur at the end of this process.

- Repair the roof in the Shoo Fly to stop leaks and retard the freeze-thaw deterioration.
- In order to perform structural analysis of the buildings, accurate as-built structural plans will be required. Develop as-built structural plans of the original framing and all of the various modifications to individual elements including the new bearing lines introduced in the abandoned casino renovation.
- Remove all the existing concrete floor surfaces, install a new vapor barrier on the soil and install a new concrete slab on grade. This new concrete slab on grade could be designed with wood nailers to receive a new wood floor system, or a new elevated wood framed floor system with a small crawl space could be hung from new ledgers attached to the existing masonry walls.
- Leave the new bearing line added during the casino renovation that supports members above with deteriorated end support conditions in place and do not alter until the original floor structure bearings are repaired.
- Remove deteriorated portions of the joists and install sister members that extend to competent bearing elements such as a ledger bolted into the masonry.
- In order to perform structural analysis of the buildings, accurate as-built structural plans will be required. Develop as-built structural plans of the original framing and all of the various modifications to individual elements and the new bearing lines introduced in the abandoned Casino renovation.
- Confirm how the original Theatre roof is framed and how it is currently supported by the roof trusses. Following investigation of theatre roof framing, perform structural analysis of roof trusses and develop repair details for roof trusses. Rehabilitate the trusses as required.
- Close all gaps and holes in the roofing, especially in the Shoo Fly, to prevent excess water from entering the building. Refer to Section 3.4.1 for recommendations regarding the building's roofing systems.
- Rebuild the leaning portion of the south wall of the Shoo Fly. Use the original brick to rebuild the wall.
- Insert a steel angle brace at the horizontal bed joint separating the random coursing and more rectangular coursed stone to brace the bowing portions of the south wall of the Shoo Fly.
- Tie exterior masonry walls together with helical anchors to ensure that all wythes are tied together.
- Rebuild the leaning portion of the south wall of the Shoo Fly. Use the original brick to rebuild the wall.
- Insert a steel angle brace at the horizontal bed joint separating the random coursing and more rectangular coursed stone to brace the bowing portions of the south wall of the Shoo Fly.
- Tie exterior masonry walls together with helical anchors to ensure that all wythes are tied together.
- Further investigate and repair the deteriorated wood located at the base of the wall. Refer to the General Structural Systems recommendation for further explanation.



- Temporarily brace the front façade in accordance with the details attached in the appendix to this assessment until a more substantial/permanent repairs are enacted that tie the brick façade to the wood floor and roof diaphragms.
- Further investigate the brick at the front (east) façade to determine if blind headers exist. The collar joint in this system can deteriorate due to freeze-thaw action and debonds the face wythe from the inner wythes. The face wythe should be sounded for delaminating areas and pinned with stainless steel helical anchors if delaminated brick areas are identified. This work should precede the masonry cleaning and restoration described below.
- Remove existing coatings and restore masonry. Re-coat with a breathable masonry coating if appropriate and desired. The existing paint film has the potential to cause further damage to the underlying masonry. Paint stripping should not utilize any mechanical abrasion, but should be completed with non-damaging chemical strippers. Several strippers and dwell times will need to be mocked-up to determine the appropriate material, application temperature and dwell time to effectively remove the existing paint coating prior to repair work. The coating should be removed using the gentlest effective paint removal system identified in the cleaning trials. Abrasive blast removal of the coating must not be used on this soft brick as it will damage the face of the brick.
- Rehabilitate the north and west walls to prevent further movement and resultant deterioration. Rehabilitation should include:
  - Investigation of masonry walls to determine if blind headers are present.
  - Installation of helical ties to tie wythes together.
  - Repoint areas of missing and deteriorated mortar.
  - Replace sections of missing and deteriorated masonry.
  - Secure walls to the rest of the building structure to stabilize the walls and limit movement.
- Repoint cracking and deteriorating mortar joints at the east wall of the theatre section of the building.
- Complete the following rehabilitation scope to slow on-going deterioration and protect adjacent materials if the existing cornice is to remain on the building:
  - Remove loose material to protect pedestrians below.
  - Seal the joint between the flat and profiled wood trim at the top of the cornice where water is currently leaking through.
- Replace the wood fascia board along the west elevation of the fly space. When fascia board is replaced, install appropriate roof drainage system as outlined in Section 3.4.4.
- Remove the paint coating from the exterior of the building. Once coating has been removed from the exterior of the building, rehabilitate brick masonry. If painting the building is appropriate and desired, a breathable coating appropriate for painting masonry should be used.
- Replace missing and severely damaged brick at the section of the building to the south of the fly space. Repoint sections of brick as required.
- Remove stair and landing at the south entrance to the Shoo Fly section of the building. Install code compliant stair and landing to access this entrance to the building. The stair and landing should be designed to complement the historic character of the building.
- Replace roof at the east section of the theatre with appropriate roofing material such as corrugated metal panels or asphalt roll roofing. If a flat roof is re-established to match the

historic appearance of the building, flat roofing material such as EPDM may be used in this area.

- Replace roof on the Shoo Fly section of the building. A membrane material such as EPDM would be an appropriate replacement material for this section of the building.
- Replace lower flat roof located to the south of the fly space (identified as the 'cooler' on the lower level floor plan). A membrane roofing material such as EPDM would be an appropriate replacement material for this section of the building.
- Replace flashing when roofs are replaced.
- If roof replacement will not be imminent, temporarily protect open joints such as the joint between the Shoo Fly roof and the south wall of the theatre section of the building.
- Replace gutters along the north and south elevations of the theatre.
- Replace downspout at the northeast corner of the building and direct discharge into underground drainage system.
- Replace gutter and downspout along the edge of the lower roof to the south of the fly space.
- Install gutter and downspout along the west elevation of the fly space.
- Remove plaster from the east wall of the mezzanine to allow for masonry rehabilitation including repointing and crack repairs. Upon completion of masonry repairs, reinstall plaster on interior surfaces.
- Remove mold from the gypsum board in the theatre space.
- A thorough evaluation of the existing electrical service entry, distribution equipment and panelboards by a qualified electrical engineer is recommended to determine if any of these components can be reincorporated into a complete building rehabilitation. If mechanical air conditioning is required or desired, the existing 400 amp service is probably not adequate.
- The following material analyses are recommended prior to or as a part of any future rehabilitation or alteration project:
  - Wood species identification for the following sections of the building:
    - Sample from a trussed girder in the Theatre
  - Mortar analysis to determine existing composition and recommended proposed repointing mix designs for repointing and repair of brick and stone masonry. Samples from the following sections of the building should be analyzed:
    - Sample from the brick and stone areas of the Shoo Fly
    - Sample from the façade brick on the Theatre section of the building
- Flat jack testing of the deteriorated brick and stone masonry is recommended to develop an understanding of in situ stress levels and strength of the masonry. There are references to flat jack tests performed by Atkinson-Noland in the 1998 RMMI report. Atkinson-Noland was contacted recently regarding this report and they indicated that they have test values, however, the locations of these tests are only generally indicated in the documentation that they have available in their archive. Some additional new flat jack testing at the deteriorated stone and brick sections is recommended to update the material information which will be used in a future structural analysis and repair design for the masonry walls.
- Non-destructive evaluation (NDE) survey of the existing reinforced concrete walls and CMU is recommended to identify existing reinforcing bar size and spacing. Limited exploratory openings in the walls would be required to confirm the NDE survey results.
- Complete paint color sequence analysis for the following areas:
  - Exterior wood work

- Exterior masonry

### 5.1.2 Serious Deficiencies (Action Required 2 - 5 Years)

Serious deficiencies should be corrected after all critical deficiencies have been corrected and within the next 2 to 4 years.

- Rehabilitate metal fire escape to the north of the theatre. (Serious) Rehabilitation should include:
  - Remove loose material
  - Replace missing and severely damaged metal components
  - Coat areas of rust with rust-converting primer
  - Prep, prime, and paint
- Replace sidewalk along the east elevation of the building. Where extant, retain original materials.
- Remove debris from the site to the south of the building.
- The likely candidate location for a new lateral force resisting (LFRS) element (such as a new shear wall or moment frame) is the front façade of the theatre. Each type of element has various pros and cons that will need to be considered prior to selecting a strengthening approach. The least costly LFRS element would be a new plywood shear wall at the inside face of the existing exterior masonry wall. This approach entails furring out the interior walls of the theatre front façade with a new 2x4 wall (either wood studs or light gage metal studs) sheathed with plywood or oriented strand board (OSB). This is a reversible structural intervention and would aesthetically impact the visible depth of the existing façade openings. Another approach would be to install new steel moment frames near ~~to~~ the exterior masonry wall. The moment frames would consist of new horizontal steel beams and vertical steel columns attached to the existing wood floor diaphragms at the second floor and roof levels. These frames are also a reversible intervention and will also somewhat encroach on interior space. The columns would be located between windows and new soffits would be created at the beam locations. Most likely, this approach will be significantly more expensive than the shear wall approach due to construction logistics including inserting and integrating the heavy steel frame elements into the building and welding the frames together.
- The large openings added to the Shoo Fly's north wall are framed with concrete posts and beams. The reinforcement of these concrete elements is unknown. They may have adequate reinforcing to act as moment frames or they may require strengthening to adequately resist in-plane lateral loads in the north wall.
- The existing, modern-era, reinforced concrete stage area addition may be able to act as an anchor/buttress for the weaker URM portions of the structure. Further investigation of the size and spacing of reinforcing steel in these walls will be needed to develop a better understanding of their structural capacity.
- Further investigation of the construction of the rubble stone walls below the stage is recommended if a lateral strengthening scheme uses the stage walls to resist lateral demands from the URM portions of the structure.
- There are clauses in Chapter 34 of the International Building Code that could be explored during a code study that may exempt the building from a full seismic upgrade during the proposed renovation. However, given the deteriorated structural condition of the existing URM walls and the fact that the proposed primary function for the building is public assembly, it would be prudent to explore an overall strengthening scheme that achieves code

compliance to at least some percentage of new buildings.

- Install a perimeter drain around the exposed faces of the building, add hardscape, or at a minimum provide positive grading to drain water away from the foundation.
- Installing exterior-side waterproofing on the exterior masonry stem walls where accessible around the building perimeter is a treatment that could limit moisture entering the foundation walls. At the interior face of the masonry stem, a continuous metal flashing could be installed in a sawcut reglet near the base of the wall to act as a capillary break.
- Investigate the construction of the foundation walls below the stage and pit to determine if the foundations system can be used in combination with the CIP walls to resist the building's lateral demands and in return relieve lateral demands on the URM portions of the structure.
- Infill or rehabilitate the open joist pockets on the lower level of the Shoo Fly. If wood framing is re-established for a floor in this section of the building, the joist pockets could be re-used. If a concrete slab is established with a floor on top of the slab which does not necessitate joist pockets, infill the joist pockets with masonry matching the existing.
- Reset the ceilings joists in the northwest corner of the Shoo Fly building.
- Coordinate structural removal of existing modern stair at the northeast corner with architectural recommendations for historically appropriate stair.
- Install appropriate interior finishes throughout the building to conceal wood framing, offering inherent fire resistive properties.
- If the masonry restoration and coating removal cannot be enacted for several years, installing a temporary heating system to keep the building interior above freezing will mitigate the rate of freeze-thaw deterioration that the masonry currently experiences.
- Further non-destructive evaluation of the stage walls construction is recommended to determine its structural strength and stiffness for use in an overall lateral analysis of the three adjoining structures.
- Reconstruct the kitchen section of the building. The kitchen should be reconstructed using documentation of the original kitchen to design the reconstruction work.
- Remove the cornice along the east elevation of the theatre section of the building. When cornice is removed, rehabilitate brick masonry as required at the upper section of the east elevation. Upon completion of masonry rehabilitation, install new wood cornice in compliance with the Secretary of the Interior's Standards for Rehabilitation.
- Rehabilitate parge coat at the lower section of the east elevation. Rehabilitation should include removal of loose material, rehabilitation of the masonry substrate, and re-parging the base of the building. When the parge coat is re-installed, it can be painted with an appropriate product.
- When the kitchen is reconstructed, rehabilitate the plaster on the interior walls of the kitchen space which are currently exposed to weathering and deterioration. Rehabilitation of these walls will include the following:
  - Remove loose and damaged plaster
  - Patch plaster where sections of plaster have delaminated
  - Prep, prime, and paint plaster
- Complete evaluation of wood siding at the upper section of the east elevation to determine if replacement is required or if rehabilitation is possible.
- Remove sheet metal located along the upper section of the north elevation. Rehabilitate the



north wall of the building so a sheet metal covering is not required.

- Remove vertical wood siding at the upper section of the south elevation. Rehabilitate the south wall of the theatre building so that the vertical wood siding can be removed.
- Rehabilitate recessed entrances on the east elevation of the theatre section of the building. Rehabilitation should include:
  - If restoration of the building is desired, modify entrances and recesses to match historic appearance. If rehabilitation is the approach used for the building, new, historically compatible design for these locations is appropriate.
  - Replacement of missing finishes.
  - Rehabilitation of existing finishes including stucco and masonry.
  - Establish one entrance as an ADA compliant access to the building.
- Rehabilitate the chimney on the south elevation of the Shoo Fly. Rehabilitation should include:
  - Rehabilitation of brick masonry including repointing, replacement of missing or damaged brick, and resetting of out of plane masonry.
  - Rehabilitation of parge coat including repair of cracks, patching missing sections, and prepping, priming, and painting.
- Replace the roof on the theatre space with historically appropriate roofing material such as corrugated metal.
  - When the roof is replaced, install sheet metal flashing where required.
- Replace roof on the fly space. A membrane material such as EPDM would be an appropriate replacement material for this section of the building.
- As much of the fabric of the original existing doors as possible should be saved. Heavily damaged components should be replaced with matching components. Repairs should include the installation of new components, epoxy consolidation and fill, as required. Scrape, prime and paint to match original color scheme. Frames and transoms should be repaired, scraped, primed and painted.
- Replace previously replaced exterior doors with historically appropriate doors, frames, trim, and hardware.
  - Consider reconfiguration of the entrances along the east elevation to match the original appearance of the building. If a rehabilitation approach is taken for the building, these entrances can be designed to integrate historically compatible doors, as opposed to reconstructing the doors visible in historic photographs.
- Rehabilitate the existing windows. Follow guidelines in the National Park Service's Preservation Brief 9: The Repair of Historic Wood Windows. Rehabilitation should include the following:
  - Install new components where original components are missing or severely deteriorated.
  - Apply epoxy consolidation and fill, where wood rehabilitation is possible. It is an important preservation consideration to retain as much of the original material of the building as possible.
  - Secure window frames in masonry openings. Seal joints around each window with a high quality elastomeric sealant on the exterior.
  - Scrape off loose window putty material and replace window putty where necessary. Match existing composition and color as closely as possible. Replace broken panes to match existing.

- After all repairs have been completed, remove all existing loose paint; sand substrates smooth, repair with epoxy consolidant where necessary, and prime and repaint. All wood surfaces should be primed with a high quality oil-based wood primer and then top coated with two coats of acrylic latex or oil-alkyd paint. Investigation into the original paint scheme of the building should be conducted prior to selecting a new paint scheme. It is desirable to reproduce the original paint scheme if it can be determined.
- Weather-stripping the windows would reduce air infiltration and improve thermal comfort in the building. The installation of metal weather-stripping in the jamb and window channels is recommended. Weather-stripping should not detract from the historic appearance of the windows.
- Installation of interior storm windows would reduce air infiltration and improve thermal comfort in the building. The installation of interior storm windows should be accomplished in a manner that is sensitive to the historic character of the building and has minimal impact on the extant original materials.
- After all water intrusion repair work has been completed, rehabilitate damaged areas of plaster and paint to match existing. Follow the guidelines established in the National Park Service's Preservation Brief 21: Repairing Historic Flat Plaster – Wall and Ceilings. Damaged areas of plaster include deteriorated, delaminated, and cracked plaster surfaces. Rehabilitation of the deteriorated plaster should include the following:
  - For severely damaged areas, remove of all loose plaster down to the solid substrate and re-plaster.
  - Rehabilitate brick masonry substrate where required.
  - Rake out minor cracks in the existing plaster and patch with patching material.
  - Fill holes, dimples and other uneven surfaces with patching material.
  - Texture, prime, and paint the patched areas in historically appropriate colors.
  - All plaster repairs should replicate the original surface finish and scoring pattern of adjacent surfaces.
- After all water intrusion repair work has been completed, repair damaged areas of plaster and paint to match existing original surfaces. Follow the guidelines established in the National Park Service's Preservation Brief 21: Repairing Historic Flat Plaster – Wall and Ceilings. Plaster damage throughout the building includes deterioration, delamination, and cracking. Repair of the deteriorated plaster can take several approaches including the following:
  - Remove severely damaged plaster down to the solid basecoats or lath, and then re-plaster.
  - Rake out and patch minor cracks with patching material.
  - Fill holes, dimples and other uneven surfaces with patching material.
  - Texture, prime, and paint the patched areas in historically appropriate colors.
- Where ceiling finishes have been removed, appropriate finishes should be installed when any required structural repairs in the area have been completed. Appropriate materials may include painted plaster or gypsum board, depending on the use of the space, desired finished appearance, and funding available.
- Replace flooring where finish material is missing or severely damaged. Replacement flooring should be historically appropriate such as tongue and groove wood flooring.
- Replace carpet on the stairs and at the base of the stairs with appropriate flooring materials.

Depending on the use of the space, carpet may be appropriate in these areas.

- Install flooring materials where finishes have been removed in the lower level of the building. Finish selection should be based on the anticipated use of the space as well as the historic character of the building.
- Rehabilitate existing flooring where possible. Rehabilitation should include re-finishing historic wood flooring in spaces such as the theatre space and where flooring is extant in the men's and women's restrooms.
- Remove the modern stair in the northeast corner of the building. Construct a historically appropriate stair in a location that works with the existing architecture of the building and functions well for the proposed future use of the building.
- A contemporary new use for the building will require the design and installation of a new central heating and ventilation system that complies with current building code requirements. A mechanical air conditioning system may be required if the building occupancy exceeds that which could be accommodated by ventilation alone. Potential locations for mechanical equipment include:
  - The roof top of the "Shoo-fly" building, provided the roof structure is reinforced to accommodate the weight of mechanical equipment and equipment placement does not adversely affect the historic character of the building's exterior.
  - In the interstitial attic space between the original roof of the theater building and the current pitched roof, provided the original structure can support the weight of mechanical equipment and the equipment is small enough to allow for installation in the confined attic space.
  - In the "pit" area of the lower level provided access to the outside for intake and exhaust is provided.
- The rehabilitation of the building will require the design and installation of a new code-compliant plumbing system. Public restrooms of the quantity required to satisfy the reuse occupancy of the building will be required. None of the existing components of the plumbing system should be assumed to be reusable.
- Depending upon the future use of the building, a code-compliant fire protection system is recommended. It would be prudent to install a fire protection system in the entire building as part of building rehabilitation project.
- The complete replacement of the electrical service with new equipment is recommended as part of a complete building rehabilitation.
- All existing electrical distribution from the panelboards to final terminations should be replaced with new conduit, conductors and terminal devices. Existing rigid conduit (EMT) that is intact and in good physical condition can be reused if compliant with current electrical code requirements.
- Install historically appropriate exterior light fixtures at building entrances and elsewhere as appropriate. Fixtures should be simple in design and should not detract from the historic character of the building or damage any extant original finishes.
- A complete redesign of the interior lighting is recommended as part of the rehabilitation of the building. New lighting should be chosen to accommodate the new uses of the building, for energy efficiency and for compatibility with the historic character of the building.
- Installation of a fire detection system is recommended. The system should be installed in such a manner that it minimizes the impact to any extant historic finishes and the historic

character of the building.

### 5.1.3 Minor Deficiencies (Action Required 5 - 10 Years)

- Determine if the foundations for the kitchen are still in place. If so, the original footings may be incorporated into any new structure that may need to be added in this location, however if they are in poor condition or missing, new foundations will be required.
- Reconstruct the outer wythe of spalling brick at the Theatre.
- Provide visible signage that indicates the maximum amount of people allowed on the main level floor of the Theatre to avoid overstressing the floor framing system.
- Rebuild the southern brick bearing for the third truss from the east in the Theatre.
- Confirm the configuration and condition of the Stage roof.
- Depending on the established use for the building, re-establish door openings which have been boarded up such as the door opening on the west elevation of the fly space.
- Remove masonry infill at window opening at the upper level of the theatre section and install a historically appropriate replacement window.
- Upon determination of a use for the building and final design for interior layout, remove wood frame partitions in the lower level. Install partition walls to align with the new use for the building.
- Patch gypsum board ceiling above the mezzanine including in the men's and women's restrooms and the storage room. Prep, prime, and paint the ceiling to attain a uniform appearance.
- Replace existing interior doors with historically appropriate doors.
- When the building is rehabilitated for re-use, install doors as required throughout the building. Doors should complement the historic character of the building.
- Remove non-historic toilet partitions. When new restrooms are established in the building, install appropriate toilet partitions.
- Re-secure wood base trim in the women's restroom.
- Rehabilitate wood wainscot in the theatre space. Rehabilitation should include refinishing the wood components.
- Replace carpeting on the stairs from the theatre to the mezzanine and the theatre to the Shoo Fly.
- Rehabilitate wood trim in the Shoo Fly. Rehabilitation should include replacement of missing sections and repair of extant sections which are damaged and deteriorated. (Minor)
- Rehabilitate wood casework in the Shoo Fly. Rehabilitation should include replacement of missing and damaged wood components, reconstruction of missing sections, and refinishing of the casework.
- Remove the secondary railing along the mezzanine. Modify the railing to meet code requirements for height.
- Rehabilitate mezzanine and Shoo Fly railings. Rehabilitation should include:
  - Remove extant deteriorated finishes.
  - Repair wood components where required.
  - Replace missing and damaged components.
  - Re-finish wood components.
  - Alternatively, if documentation of the historic interior appearance is located, replace



railings with historically appropriate railings.

- Identify accessible parking spaces in close proximity to the accessible entrance to the building.
- Provide an accessible path into and through the building.
- Provide accessible restrooms in the building.
- Install an elevator to provide accessibility to the upper level of the building. Installation of the elevator should be accomplished in such a manner that it does not compromise the historic character or appearance of the building and such that it provides access to all levels of the building.

#### **5.1.4 Routine Repair Work**

- Follow the archeological guidelines required by the Office of Archaeology and Historic Preservation for all construction activities that disturb the ground on the site.
- Perform routine maintenance on operable components of hardware. Lubricate internal lockset components and hinges on a semi-annual basis. Always remove excess lubricants from exposed surfaces of hardware. Keep hardware components free of paint and dirt. Remove excessive build-ups of dirt and debris.
- Protect surrounding original materials when doing any repainting or sealant work.
- After the rehabilitation is complete, perform routine maintenance on operable components of hardware. Lubricate internal lockset components and hinges on a semi-annual basis. Always remove excess lubricants from the exposed surfaces of hardware. Keep hardware component free from paint. Remove excessive buildups of dirt and debris.
- If a security alarm system is installed in the building in the future, it should be installed in such a manner that it minimizes the impact to any extant historic finishes and the historic character of the building.
- Hazardous materials surveys to confirm the presence of lead-containing coatings, lead piping and asbestos containing materials should be conducted prior to any planned renovation of alteration and repair project. The survey report should contain recommendations for the abatement of hazardous materials.
- Review zoning code requirements when use is finalized for the building.
- Complete a full building code analysis when a building rehabilitation project is undertaken in preparation for occupation of the building.

### **5.2 PHASING PLAN**

The phasing plan organizes the work identified in the prioritized plan into discreet funding phases. The funding phases can be coordinated with a State Historical Fund grant application and the Owner's own fund raising efforts. The proposed phasing plan addresses the structure's preservation needs for the next ten to fifteen years.

The primary goal for the phasing plan is to complete the physical repair and rehabilitation needs of the structure to ensure its long term preservation as a historic resource. A grant can be an integral part to implementation of the preservation plan. The Owner can supplement its own funding of the project by applying for a grant from the State Historical Fund. The following describes one possible phasing approach and the projected costs for the project with that approach. Not all items in each

phase listed will be eligible for SHF monies.

The total cost for all phases of the project is anticipated to be approximately \$2.65 Million. This cost may decrease if multiple phases are completed concurrently to maximize construction efficiencies. However, the cost for the work may escalate if construction is not started soon and conditions worsen.

Phase One: The first phase addresses the stabilization of the east elevation of the building. The phase includes:

Preservation Activities	
Install metal bracing to stabilize east wall	\$11,650.00
Install plywood at underside of joists	\$704.00
Mobilization Cost	\$6,630.00
Structural Engineering Fee	\$2,700.00
10% Contingency	\$2,200.00
<b>Phase Total</b>	<b>\$23,884.00</b>

Phase Two: The second phase includes the work required to address the critical deficiencies. This phase includes:

Preservation Activities	\$256,190.00
Replace interior concrete slab	
Rehabilitate masonry – building and retaining wall	
Rehabilitate structural components	
Replace roof – Shoo Fly, cooler, and east section of theatre	
Rehabilitate wood framing	
Rehabilitate South Shoo Fly Entry Access	
Remove interior plaster	
General Conditions	\$51,200.00
Contractor Overhead & Profit	\$25,619.00
Permit & Bonding	\$12,810.00
Architectural & Engineering Fees	\$75,900.00
Architect	
Structural Engineer	
Civil Engineer	
Archaeological Monitoring	\$5,000.00
Site Survey	\$3,500.00
Hazardous Materials Abatement	\$12,500.00
Materials Testing	\$3,500.00
Mortar	
Wood Species Identification	
Paint Color Sequence	
Flat Jack Testing	\$3,750.00
Non-Destructive Testing at CMU walls	\$4,500.00
10% Contingency	\$45,400.00
<b>Phase Total</b>	<b>\$499,869.00</b>

Phase Three: The third phase includes the implementation of the serious work associated with site and structural rehabilitation. This phase should be re-evaluated as some of the elements of this phase may move up to critical if deterioration continues at a faster pace than anticipated.

Preservation Activities	\$216,600.00
Rehabilitate sidewalk	
Rehabilitate site drainage	
Rehabilitate structure	
Rehabilitate fire escape	
Install foundation water-proofing	
Install site drainage	
Replace theatre and fly space roofs	
General Conditions	\$43,300.00
Contractor Overhead & Profit	\$21,660.00
Permit & Bonding	\$10,830.00
Architectural & Engineering Fees	\$47,500.00
Architect	
Structural Engineer	
10% Contingency	\$34,000.00
<b>Phase Total</b>	<b>\$373,890.00</b>

Phase Four: The fourth phase includes the implementation of the serious work associated with the exterior rehabilitation of the building. This phase should be re-evaluated as some of the elements of this phase may move up to critical if deterioration continues at a faster pace than anticipated.

Preservation Activities	\$204,320.00
Rehabilitate masonry	
Reconstruct kitchen section of building	
Rehabilitate cornice	
Rehabilitate upper sections of exterior theatre walls	
Rehabilitate exterior entrances	
Rehabilitate exterior windows	
General Conditions	\$40,900.00
Contractor Overhead & Profit	\$20,432.00
Permit & Bonding	\$10,216.00
Architectural Fees	\$30,600.00
10% Contingency	\$30,600.00
<b>Phase Total</b>	<b>\$337,068.00</b>

Phase Five: The fifth phase includes the implementation of the serious work associated with interior rehabilitation and mechanical, electrical, and plumbing systems. This phase should be re-evaluated as some of the elements of this phase may move up to critical if deterioration continues at a faster pace than anticipated.

Preservation Activities	\$668,890.00
Rehabilitate interior finishes	
Install fire suppression system	
Install plumbing system	
Install HVAC system	
Install electrical system	
General Conditions	\$133,800.00
Contractor Overhead & Profit	\$66,889.00
Permit & Bonding	\$33,445.00
Architectural & Engineering Fees	\$158,300.00
Architect	
Structural Engineer	
Electrical Engineer	
Mechanical / Plumbing Engineer	
10% Contingency	\$106,100.00
<b>Phase Total</b>	<b>\$1,167,424.00</b>

Phase Six: The sixth phase includes the implementation of the minor work which primarily includes work on interior finishes not addressed in a previous phase. This phase should be re-evaluated as some of the elements of this phase may move up to critical if deterioration continues at a faster pace than anticipated.

Preservation Activities	\$148,350.00
Rehabilitate spalling exterior wythe of brick at theatre	
Rehabilitate truss bearing	
Re-establish historic window and door openings	
Rehabilitate interior finishes	
General Conditions	\$29,700.00
Contractor Overhead & Profit	\$14,835.00
Permit & Bonding	\$7,418.00
Architectural Fees	\$22,300.00
10% Contingency	\$22,300.00
<b>Phase Total</b>	<b>\$244,903.00</b>



### 5.3 Estimate of Probable Cost of Construction

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Estimated: JRR				
Phase I - Critical Deficiencies - East Wall Stabilization			Checked: GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION ONE - GENERAL CONDITIONS</b>				
Mobilization	\$6,630.00	l.s.	1	\$6,630.00
				<b>\$6,630.00</b>
<b>DIVISION TWO - EXISTING CONDITIONS</b>				
DIVISION 02000 TOTAL				<b>\$0.00</b>
<b>DIVISION THREE - CONCRETE WORK</b>				
DIVISION 03000 TOTAL				<b>\$0.00</b>
<b>DIVISION FOUR - MASONRY WORK</b>				
DIVISION 04000 TOTAL				<b>\$0.00</b>
<b>DIVISION FIVE - METALS</b>				
Install interior adjustable wall brace	\$2,500.00	ea	2	\$5,000.00
Install exterior plate and tie rod bracket attached to floor joists	\$750.00	ea	8	\$6,000.00
Install exterior plate and tie rod bracket attached to ceiling joists	\$650.00	ea	1	\$650.00
DIVISION 05000 TOTAL				<b>\$11,650.00</b>
<b>DIVISION SIX - WOOD, PLASTICS &amp; COMPOSITES</b>				
Install new plywood at underside of joists	\$22.00	sf	32	\$704.00
DIVISION 06000 TOTAL				<b>\$704.00</b>
<b>DIVISION SEVEN - THERMAL &amp; MOISTURE PROTECTION</b>				
DIVISION 07000 TOTAL				<b>\$0.00</b>
<b>DIVISION EIGHT - OPENINGS</b>				
DIVISION 08000 TOTAL				<b>\$0.00</b>
<b>DIVISION NINE - FINISHES</b>				
DIVISION 09000 TOTAL				<b>\$0.00</b>
<b>DIVISION TEN - SPECIALTIES</b>				
DIVISION 10000 TOTAL				<b>\$0.00</b>

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
AND PRESERVATION PLAN

HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre		Date: Jul-16		
Estimated: JRR				
Phase I - Critical Deficiencies - East Wall Stabilization		Checked: GJP		
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION ELEVEN - EQUIPMENT</b>				
DIVISION 11000 TOTAL				\$0.00
<b>DIVISION TWELVE - FURNISHINGS</b>				
DIVISION 12000 TOTAL				\$0.00
<b>DIVISION THIRTEEN - SPECIAL CONSTRUCTION</b>				
DIVISION 13000 TOTAL				\$0.00
<b>DIVISION FOURTEEN - CONVEYING EQUIPMENT</b>				
DIVISION 14000 TOTAL				\$0.00
<b>DIVISION TWENTY TWO - PLUMBING</b>				
DIVISION 22000 TOTAL				\$0.00
<b>DIVISION TWENTY THREE - HEATING VENTILATION AND AIR CONDITIONING</b>				
DIVISION 23000 TOTAL				\$0.00
<b>DIVISION TWENTY SIX - ELECTRICAL</b>				
DIVISION 26000 TOTAL				\$0.00
<b>DIVISION TWENTY EIGHT - ELECTRONIC SAFETY AND SECURITY</b>				
DIVISION 28000 TOTAL				\$0.00
<b>DIVISION THIRTY ONE - EARTHWORK</b>				
DIVISION 31000 TOTAL				\$0.00
<b>DIVISION THIRTY TWO - EXTERIOR IMPROVEMENTS</b>				
DIVISION 32000 TOTAL				\$0.00
<b>DIVISION THIRTY THREE- UTILITIES</b>				
DIVISION 33000 TOTAL				\$0.00
<b>SUBTOTAL A (DIV 02-33)</b>				\$12,354.00
<b>Mobilization Cost (As indicated in Div 01)</b>				\$6,630.00
<b>CONSULTING FEES ARCHITECTURAL</b>	0.0%			\$0.00
Structural Engineer	\$2,700.00	ls.	1	\$2,700.00
<b>SUBTOTAL B</b>				\$21,684.00
<b>CONTINGENCY =</b>	10.0%			\$2,200.00
<b>TOTAL PROBABLE PROJECT COST</b>				\$23,884.00

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
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HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

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1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Estimated: JRR				
Phase 2 - Critical Deficiencies			Checked: GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION ONE - GENERAL CONDITIONS</b>				
GENERAL CONDITIONS (added after total)	20% of total			<b>\$51,200.00</b>
Includes field services, temporary facilities, bonds and insurance				
<b>DIVISION TWO - EXISTING CONDITIONS</b>				
Miscellaneous demolition and hauling	\$3,000.00	Ls.	1	\$3,000.00
DIVISION 02000 TOTAL				<b>\$3,000.00</b>
<b>DIVISION THREE - CONCRETE WORK</b>				
Remove existing concrete slab, install vapor barrier, and install new concrete slab	\$9.00	sf	2,900	\$26,100.00
DIVISION 03000 TOTAL				<b>\$26,100.00</b>
<b>DIVISION FOUR - MASONRY WORK</b>				
Rehabilitate retaining wall	\$75.00	sf	100	\$7,500.00
Reinforce parapet and cornice	\$7,500.00	allowance	1	\$7,500.00
Reconstruct leaning section of south wall of Shoo Fly	\$15,000.00	allowance	1	\$15,000.00
Insert steel angle brace to address bowing sections of south wall of Shoo Fly	\$45.00	lf	50	\$2,250.00
Tie exterior masonry walls together with helical ties	\$60.00	sf	200	\$12,000.00
Remove existing masonry coating from exterior of building	\$10.00	sf	2,500	\$25,000.00
Repoint cracked and deteriorated mortar joints	\$16.00	sf	1,250	\$20,000.00
Apply breathable masonry coating to exterior walls	\$6.00	sf	2,500	\$15,000.00
Stabilize north and west exterior walls of theatre to prevent further movement and deterioration	\$10,000.00	allowance	1	\$10,000.00
Replace missing and damaged brick at section of building to the south of the fly space	\$50.00	sf	500	\$25,000.00
DIVISION 04000 TOTAL				<b>\$139,250.00</b>
<b>DIVISION FIVE - METALS</b>				
Replace flashing when roofs are replaced	\$8.00	lf	500	\$4,000.00
DIVISION 05000 TOTAL				<b>\$4,000.00</b>
<b>DIVISION SIX - WOOD, PLASTICS &amp; COMPOSITES</b>				
Replace decayed wood plate atop foundation	\$12.00	lf	240	\$2,880.00
Remove deteriorated section of joists and install sister members	\$150.00	ca	30	\$4,500.00
Rehabilitate roof trusses as required	\$15,000.00	allowance	1	\$15,000.00
Remove loose materials at cornice	\$2,500.00	allowance	1	\$2,500.00
Replace wood fascia on west elevation of fly space	\$8.00	lf	30	\$240.00
Remove stair and landing on south elevation of Shoo Fly. Construct new code compliant stair and landing in this location	\$25,000.00	allowance	1	\$25,000.00
DIVISION 06000 TOTAL				<b>\$50,120.00</b>

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Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
			Estimated:	JRR
Phase 2 - Critical Deficiencies			Checked:	GJP
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION SEVEN - THERMAL &amp; MOISTURE PROTECTION</b>				
Seal building to pavement joint	\$3.00	lf	120	\$360.00
Replace roof in the Shoo Fly section of the building	\$8.00	sf	1,150	\$9,200.00
Install gutter and downspout along west elevation of fly space	\$12.00	lf	30	\$360.00
Seal leaking joints in cornice	\$3.00	lf	90	\$270.00
Replace roof at the east end of the theatre section of the building	\$8.00	sf	780	\$6,240.00
Replace flat roof on the 'cooler' section of the building	\$8.00	sf	170	\$1,360.00
Install rigid insulation at sections of flat roof that are to be replaced	\$4.00		2,100	\$8,400.00
Replace gutters along north and south elevations of the theatre	\$12.00	lf	140	\$1,680.00
Replace downspout and discharge at northeast corner of the building	\$12.00	lf	50	\$600.00
DIVISION 07000 TOTAL				<b>\$28,470.00</b>
<b>DIVISION EIGHT - OPENINGS</b>				
DIVISION 08000 TOTAL				<b>\$0.00</b>
<b>DIVISION NINE - FINISHES</b>				
Remove plaster from east wall of mezzanine to allow for masonry rehabilitation	\$5.00	sf	780	\$3,900.00
DIVISION 09000 TOTAL				<b>\$3,900.00</b>
<b>DIVISION TEN - SPECIALTIES</b>				
DIVISION 10000 TOTAL				<b>\$0.00</b>
<b>DIVISION ELEVEN - EQUIPMENT</b>				
DIVISION 11000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWELVE - FURNISHINGS</b>				
DIVISION 12000 TOTAL				<b>\$0.00</b>
<b>DIVISION THIRTEEN - SPECIAL CONSTRUCTION</b>				
DIVISION 13000 TOTAL				<b>\$0.00</b>
<b>DIVISION FOURTEEN - CONVEYING EQUIPMENT</b>				
DIVISION 14000 TOTAL				<b>\$0.00</b>



BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
AND PRESERVATION PLAN

HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

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1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Phase 2 - Critical Deficiencies			Estimated: JRR	
			Checked: GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION TWENTY TWO - PLUMBING</b>				
DIVISION 22000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY THREE - HEATING VENTILATION AND AIR CONDITIONING</b>				
DIVISION 23000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY SIX - ELECTRICAL</b>				
DIVISION 26000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY EIGHT - ELECTRONIC SAFETY AND SECURITY</b>				
DIVISION 28000 TOTAL				<b>\$0.00</b>
<b>DIVISION THIRTY ONE - EARTHWORK</b>				
DIVISION 31000 TOTAL				<b>\$0.00</b>
<b>DIVISION THIRTY TWO - EXTERIOR IMPROVEMENTS</b>				
Re-grade site	\$9.00	sy	150	\$1,350.00
DIVISION 32000 TOTAL				<b>\$1,350.00</b>
<b>DIVISION THIRTY THREE- UTILITIES</b>				
DIVISION 33000 TOTAL				<b>\$0.00</b>
<b>SUBTOTAL A</b>				<b>\$256,190.00</b>
<b>General Conditions (reflected from first page)</b>				<b>\$51,200.00</b>
<b>Contractor Overhead &amp; Profit (10% of Subtotal A)</b>				<b>\$25,619.00</b>
<b>Performance Bond &amp; Permit (5% of Subtotal A)</b>				<b>\$12,809.50</b>
<b>CONSULTING FEES ARCHITECTURAL</b>	15.0%			<b>\$38,400.00</b>
Structural Engineer	\$30,000.00	l.s.	1	\$30,000.00
Civil Engineer	\$7,500.00	l.s.	1	\$7,500.00
Site Survey	\$3,500.00	l.s.	1	\$3,500.00
Hazardous Materials Abatement - Mold	\$12,500.00	l.s.	1	\$12,500.00
Wood Species Identification	\$800.00	l.s.	1	\$800.00
Mortar Analysis	\$1,200.00	l.s.	1	\$1,200.00
Flat jack testing	\$3,750.00	l.s.	1	\$3,750.00
Non-destructive investigation of CMU walls	\$4,500.00	l.s.	1	\$4,500.00
Paint color sequence analysis	\$1,500.00	l.s.	1	\$1,500.00
Archaeological Monitoring	\$5,000.00	l.s.	1	\$5,000.00
<b>SUBTOTAL B</b>				<b>\$454,469.00</b>
<b>CONTINGENCY =</b>	10.0%			<b>\$45,400.00</b>
<b>TOTAL PROBABLE PROJECT COST</b>				<b>\$499,869.00</b>

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
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HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Phase 3 - Serious Deficiencies - Site and Structure			Estimated: JRR	
			Checked: GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION ONE - GENERAL CONDITIONS</b>				
GENERAL CONDITIONS (added after total)	20 % of total			<b>\$43,300.00</b>
Includes field services, temporary facilities, bonds and insurance				
<b>DIVISION TWO - EXISTING CONDITIONS</b>				
Miscellaneous demolition and hauling	\$2,500.00	l.s.	1	\$2,500.00
DIVISION 02000 TOTAL				<b>\$2,500.00</b>
<b>DIVISION THREE - CONCRETE WORK</b>				
Replace sidewalk along east elevation	\$12.00	sf	250	\$3,000.00
DIVISION 03000 TOTAL				<b>\$3,000.00</b>
<b>DIVISION FOUR - MASONRY WORK</b>				
Shear wall or moment frame at east façade	\$50,000.00	allowance	1	\$50,000.00
Infill / Rehabilitate joist pockets	\$17,500.00	allowance	1	\$17,500.00
Rehabilitate chimney	\$25,000.00	l.s.	1	\$25,000.00
DIVISION 04000 TOTAL				<b>\$92,500.00</b>
<b>DIVISION FIVE - METALS</b>				
Rehabilitate fire escape	\$15,000.00	l.s.	1	\$15,000.00
DIVISION 05000 TOTAL				<b>\$15,000.00</b>
<b>DIVISION SIX - WOOD, PLASTICS &amp; COMPOSITES</b>				
Re-set ceiling joists in Shoo Fly building	\$150.00	ea	40	\$6,000.00
DIVISION 06000 TOTAL				<b>\$6,000.00</b>
<b>DIVISION SEVEN - THERMAL &amp; MOISTURE PROTECTION</b>				
Install foundation water-proofing	\$50.00	sf	650	\$32,500.00
Replace roof at main theatre space	\$12.00	sf	3,200	\$38,400.00
Replace roof on fly space	\$12.00	sf	700	\$8,400.00
DIVISION 07000 TOTAL				<b>\$79,300.00</b>
<b>DIVISION EIGHT - OPENINGS</b>				
DIVISION 08000 TOTAL				<b>\$0.00</b>
<b>DIVISION NINE - FINISHES</b>				
DIVISION 09000 TOTAL				<b>\$0.00</b>
<b>DIVISION TEN - SPECIALTIES</b>				
DIVISION 10000 TOTAL				<b>\$0.00</b>
<b>DIVISION ELEVEN - EQUIPMENT</b>				
DIVISION 11000 TOTAL				<b>\$0.00</b>

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
AND PRESERVATION PLAN

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July 2016

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1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Estimated: JRR				
Phase 3 - Serious Deficiencies - Site and Structure			Checked: GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION TWELVE - FURNISHINGS</b>				
DIVISION 12000 TOTAL				<b>\$0.00</b>
<b>DIVISION THIRTEEN - SPECIAL CONSTRUCTION</b>				
DIVISION 13000 TOTAL				<b>\$0.00</b>
<b>DIVISION FOURTEEN - CONVEYING EQUIPMENT</b>				
DIVISION 14000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY TWO - PLUMBING</b>				
DIVISION 22000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY THREE - HEATING VENTILATION AND AIR CONDITIONING</b>				
DIVISION 23000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY SIX - ELECTRICAL</b>				
DIVISION 26000 TOTAL				<b>\$0.00</b>
<b>DIVISION TWENTY EIGHT - ELECTRONIC SAFETY AND SECURITY</b>				
DIVISION 28000 TOTAL				<b>\$0.00</b>
<b>DIVISION THIRTY ONE - EARTHWORK</b>				
DIVISION 31000 TOTAL				<b>\$0.00</b>
<b>DIVISION THIRTY TWO - EXTERIOR IMPROVEMENTS</b>				
Remove site debris	\$7,500.00	allowance	1	\$7,500.00
Perimeter drainage system	\$60.00	lf	180	\$10,800.00
DIVISION 32000 TOTAL				<b>\$18,300.00</b>
<b>DIVISION THIRTY THREE- UTILITIES</b>				
DIVISION 33000 TOTAL				<b>\$0.00</b>
<b>SUBTOTAL A</b>				<b>\$216,600.00</b>
<b>General Conditions (reflected from first page)</b>				<b>\$43,300.00</b>
<b>Contractor Overhead &amp; Profit (10% of Subtotal A)</b>				<b>\$21,660.00</b>
<b>Performance Bond &amp; Permit (5% of Subtotal A)</b>				<b>\$10,830.00</b>
<b>CONSULTING FEES ARCHITECTURAL</b>	15.0%			<b>\$32,500.00</b>
Structural Engineer - Includes additional investigation, design, and CA	\$15,000.0	l.s.	1	\$15,000.00
<b>SUBTOTAL B</b>				<b>\$339,890.00</b>
<b>CONTINGENCY =</b>	10.0%			<b>\$34,000.00</b>
<b>TOTAL PROBABLE PROJECT COST</b>				<b>\$373,890.00</b>

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
AND PRESERVATION PLAN

HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Phase 4 - Serious Deficiencies Building Exterior			Estimated: JRR	
Description			Checked: GJP	
	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION ONE - GENERAL CONDITIONS</b>				
GENERAL CONDITIONS (added after total)	20 % of total			<b>\$40,900.00</b>
Includes field services, temporary facilities, bonds and insurance				
<b>DIVISION TWO - EXISTING CONDITIONS</b>				
Miscellaneous demolition and hauling	\$2,500.00	l.s.	1	\$2,500.00
DIVISION 02000 TOTAL				<b>\$2,500.00</b>
<b>DIVISION THREE - CONCRETE WORK</b>				
DIVISION 03000 TOTAL				<b>\$0.00</b>
<b>DIVISION FOUR - MASONRY WORK</b>				
Rehabilitate brick masonry behind east elevation cornice - assume 100% repointing, replacement of approximately (20) brick	\$25.00	sf	160	\$4,000.00
Rehabilitate parge coat along lower section of east elevation	\$14.00	sf	200	\$2,800.00
Remove sheet metal and rehabilitate masonry at upper section of north elevation	\$25.00	sf	165	\$4,125.00
Rehabilitate masonry at upper section of south elevation	\$25.00	sf	165	\$4,125.00
Reconstruct masonry kitchen section of building	\$75,000.00	l.s.	1	\$75,000.00
DIVISION 04000 TOTAL				<b>\$90,050.00</b>
<b>DIVISION FIVE - METALS</b>				
DIVISION 05000 TOTAL				<b>\$0.00</b>
<b>DIVISION SIX - WOOD, PLASTICS &amp; COMPOSITES</b>				
Replace cornice along east elevation	\$150.00	l.f.	85	\$12,750.00
Evaluate and rehabilitate wood siding at upper section of east elevation	\$4.00	sf	750	\$3,000.00
Remove vertical wood siding at upper section of south elevation	\$8.00	sf	165	\$1,320.00
DIVISION 06000 TOTAL				<b>\$17,070.00</b>
<b>DIVISION SEVEN - THERMAL &amp; MOISTURE PROTECTION</b>				
DIVISION 07000 TOTAL				<b>\$0.00</b>
<b>DIVISION EIGHT - OPENINGS</b>				
Rehabilitate entrances along the east elevation	\$5,000.00	ea	5	\$25,000.00
Replace east elevation exterior non-historic doors with historically compatible doors	\$2,500.00	ea	4	\$10,000.00
Rehabilitate existing historic wood windows	\$3,500.00	ea	12	\$42,000.00
Install weather-stripping at existing historic wood windows	\$250.00	lf	12	\$3,000.00
Install interior storm windows at existing historic wood windows	\$600.00	ea	12	\$7,200.00
DIVISION 08000 TOTAL				<b>\$87,200.00</b>
<b>DIVISION NINE - FINISHES</b>				
Rehabilitate plaster walls when kitchen is reconstructed	\$15.00	sf	500	\$7,500.00
DIVISION 09000 TOTAL				<b>\$7,500.00</b>
<b>DIVISION TEN - SPECIALTIES</b>				
DIVISION 10000 TOTAL				<b>\$0.00</b>
<b>DIVISION ELEVEN - EQUIPMENT</b>				
DIVISION 11000 TOTAL				<b>\$0.00</b>



BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
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HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
Estimated: JRR				
Phase 4 - Serious Deficiencies Building Exterior			Checked: GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION TWELVE - FURNISHINGS</b>				
DIVISION 12000 TOTAL				\$0.00
<b>DIVISION THIRTEEN - SPECIAL CONSTRUCTION</b>				
DIVISION 13000 TOTAL				\$0.00
<b>DIVISION FOURTEEN - CONVEYING EQUIPMENT</b>				
DIVISION 14000 TOTAL				\$0.00
<b>DIVISION TWENTY TWO - PLUMBING</b>				
DIVISION 22000 TOTAL				\$0.00
<b>DIVISION TWENTY THREE - HEATING VENTILATION AND AIR CONDITIONING</b>				
DIVISION 23000 TOTAL				\$0.00
<b>DIVISION TWENTY SIX - ELECTRICAL</b>				
DIVISION 26000 TOTAL				\$0.00
<b>DIVISION TWENTY EIGHT - ELECTRONIC SAFETY AND SECURITY</b>				
DIVISION 28000 TOTAL				\$0.00
<b>DIVISION THIRTY ONE - EARTHWORK</b>				
DIVISION 31000 TOTAL				\$0.00
<b>DIVISION THIRTY TWO - EXTERIOR IMPROVEMENTS</b>				
DIVISION 32000 TOTAL				\$0.00
<b>DIVISION THIRTY THREE- UTILITIES</b>				
DIVISION 33000 TOTAL				\$0.00
<b>SUBTOTAL A</b>				\$204,320.00
<b>General Conditions (reflected from first page)</b>				\$40,900.00
<b>Contractor Overhead &amp; Profit (10% of Subtotal A)</b>				\$20,432.00
<b>Performance Bond &amp; Permit (5% of Subtotal A)</b>				\$10,216.00
CONSULTING FEES ARCHITECTURAL	15.0%			\$30,600.00
<b>SUBTOTAL B</b>				\$306,468.00
CONTINGENCY =	10.0%			\$30,600.00
<b>TOTAL PROBABLE PROJECT COST</b>				\$337,068.00

BELVIDERE THEATRE  
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HCM Project No. 11572.000  
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July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre			Date: Jul-16	
		Estimated:	JRR	
Phase 5 - Serious Deficiencies - Interior & MEP		Checked:	GJP	
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION ONE - GENERAL CONDITIONS</b>				
GENERAL CONDITIONS (added after total)	20 % of total			<b>\$133,800.00</b>
Includes field services, temporary facilities, bonds and insurance				
<b>DIVISION TWO - EXISTING CONDITIONS</b>				
Miscellaneous demolition and hauling	\$2,500.00	l.s.	1	\$2,500.00
DIVISION 02000 TOTAL				<b>\$2,500.00</b>
<b>DIVISION THREE - CONCRETE WORK</b>				
DIVISION 03000 TOTAL				<b>\$0.00</b>
<b>DIVISION FOUR - MASONRY WORK</b>				
DIVISION 04000 TOTAL				<b>\$0.00</b>
<b>DIVISION FIVE - METALS</b>				
DIVISION 05000 TOTAL				<b>\$0.00</b>
<b>DIVISION SIX - WOOD, PLASTICS &amp; COMPOSITES</b>				
DIVISION 06000 TOTAL				<b>\$0.00</b>
<b>DIVISION SEVEN - THERMAL &amp; MOISTURE PROTECTION</b>				
DIVISION 07000 TOTAL				<b>\$0.00</b>
<b>DIVISION EIGHT - OPENINGS</b>				
DIVISION 08000 TOTAL				<b>\$0.00</b>
<b>DIVISION NINE - FINISHES</b>				
Rehabilitate interior plaster walls	\$8.00	sf	13,500	\$108,000.00
Rehabilitate interior plaster ceilings	\$12.00	sf	1,500	\$18,000.00
Install ceiling finishes where original finishes have been removed	\$9.00	sf	6,500	\$58,500.00
Replace flooring where finishes have been removed or are damaged	\$12.00	sf	3,500	\$42,000.00
Replace carpet at stairs and base of stairs in theatre	\$12.00	sf	250	\$3,000.00
Install flooring in lower level of the building	\$15.00	sf	4,500	\$67,500.00
Rehabilitate wood flooring in theatre space	\$12.00	sf	2,370	\$28,440.00
Remove non-historic stair and reconstruct in historically compatible manner	\$25,000.00	allowance	1	\$25,000.00
DIVISION 09000 TOTAL				<b>\$350,440.00</b>
<b>DIVISION TEN - SPECIALTIES</b>				
DIVISION 10000 TOTAL				<b>\$0.00</b>
<b>DIVISION ELEVEN - EQUIPMENT</b>				
DIVISION 11000 TOTAL				<b>\$0.00</b>

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
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HCM Project No. 11572.000  
SHF Project No. 2016-HA-005  
July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre		Date: Jul-16	
Estimated: JRR			
Checked: GJP			
Phase 5 - Serious Deficiencies - Interior & MEP			
Description	Unit Cost	Unit Measure	Quantity
			Total
<b>DIVISION TWELVE - FURNISHINGS</b>			
DIVISION 12000 TOTAL			<b>\$0.00</b>
<b>DIVISION THIRTEEN - SPECIAL CONSTRUCTION</b>			
Fire detection and suppression system	\$35,000.00	l.s.	1
DIVISION 13000 TOTAL			<b>\$35,000.00</b>
<b>DIVISION FOURTEEN - CONVEYING EQUIPMENT</b>			
DIVISION 14000 TOTAL			<b>\$0.00</b>
<b>DIVISION TWENTY TWO - PLUMBING</b>			
Install building-wide plumbing system	\$5.00	sf	10,400
DIVISION 22000 TOTAL			<b>\$52,000.00</b>
<b>DIVISION TWENTY THREE - HEATING VENTILATION AND AIR CONDITIONING</b>			
Install building-wide heating and ventilation system	\$10.00	sf	10,400
Install building-wide air conditioning system	\$4.00	sf	10,400
DIVISION 23000 TOTAL			<b>\$145,600.00</b>
<b>DIVISION TWENTY SIX - ELECTRICAL</b>			
Install code compliant electrical system including replacement of all existing electrical components from panelboards to final terminations	\$75,000.00	l.s.	1
Install historically appropriate exterior light fixtures	\$350.00	ea	6
Install historically appropriate interior light fixtures	\$250.00	ea	25
DIVISION 26000 TOTAL			<b>\$83,350.00</b>
<b>DIVISION TWENTY EIGHT - ELECTRONIC SAFETY AND SECURITY</b>			
DIVISION 28000 TOTAL			<b>\$0.00</b>
<b>DIVISION THIRTY ONE - EARTHWORK</b>			
DIVISION 31000 TOTAL			<b>\$0.00</b>
<b>DIVISION THIRTY TWO - EXTERIOR IMPROVEMENTS</b>			
DIVISION 32000 TOTAL			<b>\$0.00</b>
<b>DIVISION THIRTY THREE- UTILITIES</b>			
DIVISION 33000 TOTAL			<b>\$0.00</b>
<b>SUBTOTAL A</b>			<b>\$668,890.00</b>
<b>General Conditions (reflected from first page)</b>			<b>\$133,800.00</b>
<b>Contractor Overhead &amp; Profit (10% of Subtotal A)</b>			<b>\$66,889.00</b>
<b>Performance Bond &amp; Permit (5% of Subtotal A)</b>			<b>\$33,444.50</b>
<b>CONSULTING FEES ARCHITECTURAL</b>	10.0%		<b>\$66,900.00</b>
Structural Engineer	\$20,000.00	l.s.	1
Mechanical Engineer	\$40,000.00	l.s.	1
Electrical Engineer	\$31,400.00	l.s.	1
<b>SUBTOTAL B</b>			<b>\$1,061,324.00</b>
<b>CONTINGENCY =</b>	10.0%		<b>\$106,100.00</b>
<b>TOTAL PROBABLE PROJECT COST</b>			<b>\$1,167,424.00</b>

BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
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July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre		Date: Jul-16		
		Estimated: JRR		
Phase 6 - Minor Deficiencies		Checked: GJP		
Description	Unit Cost	Unit Measure	Quantity	Total
DIVISION ONE - GENERAL CONDITIONS				
GENERAL CONDITIONS (added after total)	20 % of total			\$29,700.00
Includes field services, temporary facilities, bonds and insurance				
DIVISION TWO - EXISTING CONDITIONS				
Miscellaneous demolition and hauling	\$2,500.00	l.s.	1	\$2,500.00
DIVISION 02000 TOTAL				\$2,500.00
DIVISION THREE - CONCRETE WORK				
DIVISION 03000 TOTAL				\$0.00
DIVISION FOUR - MASONRY WORK				
Reconstruct spalling exterior wythe of brick at theatre	\$50,000.00	allowance	1	\$50,000.00
Rebuild southern brick bearing for the third truss from the east in the theatre.	\$12,500.00	allowance	1	\$12,500.00
DIVISION 04000 TOTAL				\$62,500.00
DIVISION FIVE - METALS				
DIVISION 05000 TOTAL				\$0.00
DIVISION SIX - WOOD, PLASTICS & COMPOSITES				
DIVISION 06000 TOTAL				\$0.00
DIVISION SEVEN - THERMAL & MOISTURE PROTECTION				
DIVISION 07000 TOTAL				\$0.00
DIVISION EIGHT - OPENINGS				
Re-establish door openings which have been boarded up	\$3,500.00	ea	4	\$14,000.00
Remove masonry infill and install historically appropriate window at upper level of east elevation	\$7,500.00	ea	1	\$7,500.00
DIVISION 08000 TOTAL				\$21,500.00
DIVISION NINE - FINISHES				
Remove wood framing from lower level of theatre and construction new partition walls appropriate for new use of building	\$15,000.00	allowance	1	\$15,000.00
Replace interior doors with historically appropriate doors / install new historically appropriate doors where required for new use	\$500.00	ea	10	\$5,000.00
Remove existing toilet partitions and install new partitions appropriate for the buildings use.	\$7,500.00	allowance	1	\$7,500.00
Re-secure wood base trim in women's restroom	\$25.00	lf	50	\$1,250.00
Rehabilitate wood wainscot in main theatre space	\$8.00	sf	300	\$2,400.00
Rehabilitate wood trim in Shoo Fly	\$8.00	sf	150	\$1,200.00
Rehabilitate wood casework in Shoo Fly	\$12,000.00	allowance	1	\$12,000.00
Remove secondary railing in theatre mezzanine; modify guardrail to achieve code compliance	\$17,500.00	allowance	1	\$17,500.00
DIVISION 09000 TOTAL				\$61,850.00
DIVISION TEN - SPECIALTIES				
DIVISION 10000 TOTAL				\$0.00
DIVISION ELEVEN - EQUIPMENT				
DIVISION 11000 TOTAL				\$0.00



BELVIDERE THEATRE  
HISTORIC STRUCTURE ASSESSMENT  
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HCM Project No. 11572.000  
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July 2016

**Hord Coplan Macht**  
1331 19th Street  
Denver, Colorado 80202

ESTIMATE OF PROBABLE  
CONSTRUCTION COST

303-607-0977 FAX 303-607-0767

Project: Belvidere Theatre		Date: Jul-16		
Estimated: JRR				
Phase 6 - Minor Deficiencies		Checked: GJP		
Description	Unit Cost	Unit Measure	Quantity	Total
<b>DIVISION TWELVE - FURNISHINGS</b>				
DIVISION 12000 TOTAL				\$0.00
<b>DIVISION THIRTEEN - SPECIAL CONSTRUCTION</b>				
DIVISION 13000 TOTAL				\$0.00
<b>DIVISION FOURTEEN - CONVEYING EQUIPMENT</b>				
DIVISION 14000 TOTAL				\$0.00
<b>DIVISION TWENTY TWO - PLUMBING</b>				
DIVISION 22000 TOTAL				\$0.00
<b>DIVISION TWENTY THREE - HEATING VENTILATION AND AIR CONDITIONING</b>				
DIVISION 23000 TOTAL				\$0.00
<b>DIVISION TWENTY SIX - ELECTRICAL</b>				
DIVISION 26000 TOTAL				\$0.00
<b>DIVISION TWENTY EIGHT - ELECTRONIC SAFETY AND SECURITY</b>				
DIVISION 28000 TOTAL				\$0.00
<b>DIVISION THIRTY ONE - EARTHWORK</b>				
DIVISION 31000 TOTAL				\$0.00
<b>DIVISION THIRTY TWO - EXTERIOR IMPROVEMENTS</b>				
DIVISION 32000 TOTAL				\$0.00
<b>DIVISION THIRTY THREE- UTILITIES</b>				
DIVISION 33000 TOTAL				\$0.00
<b>SUBTOTAL A</b>				\$148,350.00
General Conditions (reflected from first page)				\$29,700.00
Contractor Overhead & Profit (10% of Subtotal A)				\$14,835.00
Performance Bond & Permit (5% of Subtotal A)				\$7,417.50
CONSULTING FEES ARCHITECTURAL	15.0%			\$22,300.00
<b>SUBTOTAL B</b>				\$222,603.00
CONTINGENCY =	10.0%			\$22,300.00
<b>TOTAL PROBABLE PROJECT COST</b>				\$244,903.00

NOTES:

## 6.0 BIBLIOGRAPHY

Adaptive Environments Center, Inc. Checklist for Existing Facilities, version 2.1. for the National Institute on Disability and Rehabilitation Research, revised August 1995. (ADA information)

Allen, Edward & Iano, Joseph. *The Architect's Studio Companion : Rules of Thumb for Preliminary Design*. Second Edition. Wiley and Sons, New York, 1995. (Structural load calculation rules of thumb)

Ashurst, John & Nicola. *Practical Building Conservation, Volume 2, Brick, Terra Cotta & Earth*. New York. Halstead Press. 1988. (General information)

Ashurst, John & Nicola. *Practical Building Conservation, Volume 3, Mortars, Plasters & Renders*. New York. Halstead Press. 1988. (General information)

Ashurst, John & Nicola. *Practical Building Conservation, Volume 5, Wood, Glass & Resins*. New York. Gower Technical Press. 1988. (General information)

Bucher, W. Ward ed. *Dictionary of Building Preservation*. Preservation Press. John Wiley and Sons. New York, NY. 1996. (Useful definitions and identification)

Curtis and Yale Company *1909 Catalog*, Shattock and McKay Co., Chicago, IL 1909

Harris, Cyril ed. *Illustrated Dictionary of Historic Architecture*. Dover Publishing. New York, NY. 1983. (Useful definitions and identification)

International Code Council, *2009 International Building Code*, Country Club Hills, IL 2002 (Relevant code information) and the Denver Amendments to the above published by The City and County of Denver.

Jester, Thomas C., editor. *Twentieth Century Building Materials, History and Conservation*. Washington, D.C. McGraw-Hill. 1995. (Materials identification, dates of use and conservation)

U.S. Department of the Interior, National Park Service. *The Secretary of the Interior's Standards for Rehabilitation*. Washington, D.C. U.S. Government Printing Office. 1976, 1983, 1990. (Preservation plan guideline)

U.S. Department of the Interior, National Park Service. *Preservation Briefs*. Washington, D.C. U.S. Government Printing Office.

Preservation Briefs assist building owners, architects, contractors and developers of historic buildings in recognizing and resolving common preservation and repair problems prior to work. The Briefs are especially useful to preservation tax incentive program applicants and applicants to the Colorado Historical Society's State Historical Fund grant program because the Briefs recommend methods and approaches for rehabilitating historic buildings that are consistent with their historic character and follow The Secretary of the Interior's Standards for Rehabilitation. The following Briefs may be of specific relevance to the rehabilitation of this building.

- 01: Cleaning and Water-Repellent Treatments for Historic Masonry Buildings.
- 02: Repointing Mortar Joints in Historic Masonry Buildings.
- 03: Improving Energy Efficiency in Historic Buildings.
- 04: Roofing for Historic Buildings.
- 09: The Repair of Historic Wooden Windows.
- 10: Exterior Paint Problems on Historic Woodwork.
- 18: Rehabilitating Interiors in Historic Buildings – Identifying Character-Defining Elements.
- 21: Repairing Historic Flat Plaster – Walls and Ceilings.
- 24: Heating, Ventilating and Cooling Historic Buildings- Problems and Recommended Approaches.
- 28: Painting Historic Interiors.
- 31: Mothballing Historic Buildings.
- 32: Making Historic Properties Accessible.
- 39: Holding the Line: Controlling Unwanted Moisture in Historic Buildings.

Weeks, Kay D., Grimmer, Anne E. The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings. Washington, D.C. U.S. Department of the Interior, National Park Service, Cultural Resource Stewardship and Partnerships, Heritage Preservation Services. 1995.

## 7.0 APPENDIX





JVA, Incorporated  
1319 Spruce Street  
Boulder, CO 80302  
303.444.1951  
info@jvajva.com

December 29, 2015

[www.jvajva.com](http://www.jvajva.com)

Mr. Roger Baker  
Gilpin County Manager  
Courthouse, 2<sup>nd</sup> Floor  
PO Box 366  
Central City, Colorado 80427

RE: Belvidere Theatre –Façade Bracing  
JVA #17871

Dear Mr. Baker:

JVA visited the Belvidere Theatre on December 17<sup>th</sup> and 23<sup>rd</sup> to perform a structural condition assessment for the ongoing Historic Structure Assessment (HSA) project led by Hord Coplan Macht. We made several observations of structural conditions which prompted this letter to you. Our observations indicate that the exterior wall of the Theatre addition is separating and moving outward from the rest of the building. It is our opinion that this wall should be braced/shored as soon as possible.

The Belvidere theatre building consists of two eras of construction. The Shoo Fly building was constructed first and has numerous S-shaped plates and tie-rods that brace its façade. The Theatre building is a horizontal addition added adjacent to the original Shoo Fly building. The exterior façade (east façade) of the newer Theatre addition building (Figure 1) has minimal lateral connection to the perpendicular floor and wall structure. There are three S-shaped anchor plates at mid-height of the façade.

We observed the tie rod and perpendicular masonry wall at the second floor level nearest to the Shoo Fly building (Figures 2 and 3). There is a large diagonal crack located within the second floor wall (Figure 3). The tie rod bridges this crack. There are significant structural cracks in this same wall at the lower floor level (Figures 4 through 6). These cracks include sheared header bricks at the corners (Figures 5) and a vertical separation which indicates the façade is moving independently of the perpendicular wall (Figure 6). Originally these two walls were connected by the now fractured header bricks.


The second floor and attic floor wood framing structure runs parallel to the façade. We observed at an existing opening in the second floor ceiling that there is a board pocketed into the inside face of the façade (Figure 7). There is a vertical crack at this location (Figure 8). We also noted vertical cracks in the entry way that have occurred since the last time the façade was painted (Figures 9 to 11).



These observations indicate the addition's front façade is separating from the rest of the structure and is effectively a two-story free standing unreinforced masonry wall with minimal lateral support at the second floor and roof. This cracking and separation of the front façade from the perpendicular walls was noted by Mountain Design Group (MDG) in their February 14, 2006 response letter to the Colorado Code Consulting letter to the previous building owner. The MDG letter included design drawings for a façade bracing scheme. However, these steel braces were never installed. The masonry at the base of this wall is deteriorating due to freeze-thaw action.

We understand from our discussion with you that a grant application has been made for a new roof over the original building. It is our opinion that bracing the façade of the addition should take priority over any re-roofing project and that temporary bracing/shoring of this wall should be installed as soon as possible. We would be pleased to assist you with the design of this façade bracing system.

Sincerely,  
JVA, INCORPORATED

By:   
\_\_\_\_\_  
Lawrence M. Graham, PE  
Senior Project Manager

Enclosure: Figures 1 to 11

CC: Jessica Reske, AIA – Hord Coplan Macht

Photographs:

[www.jvajva.com](http://www.jvajva.com)



Figure 1: Overview of Belvidere Theatre East elevation



Figure 2: S-shaped anchor plate (Note multiple plates at original building, but single plate at addition façade)



Figure 3: Internal Tie rod at S-anchor plate location. Note large diagonal crack in wall.



Figure 4: Overview view of wall below tie-rod location





Figure 5: Cracking between façade and perpendicular wall (sheared header bricks at corner)



Figure 6: Displacement between façade and perpendicular wall





Figure 7: Attic floor to wall interface overview opening in ceiling



Figure 8: Board pocketed into exterior façade. Note vertical cracking in wall below board.

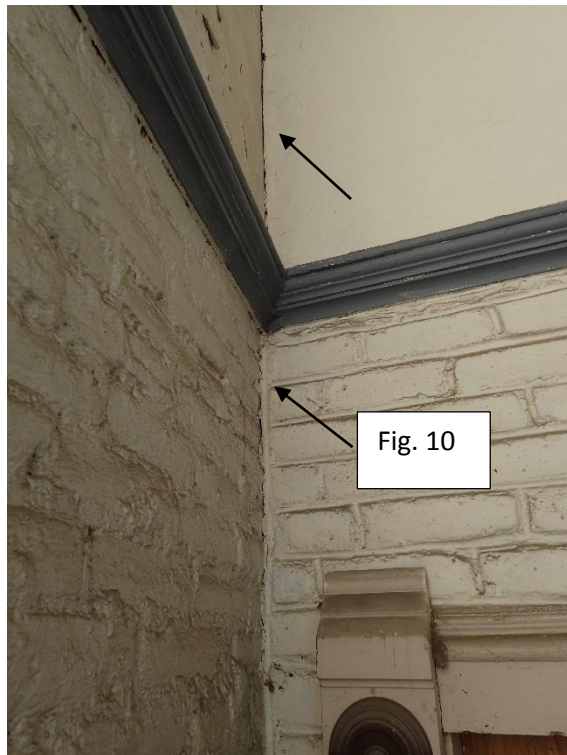


Figure 9: Vertical cracking between façade and perpendicular wall

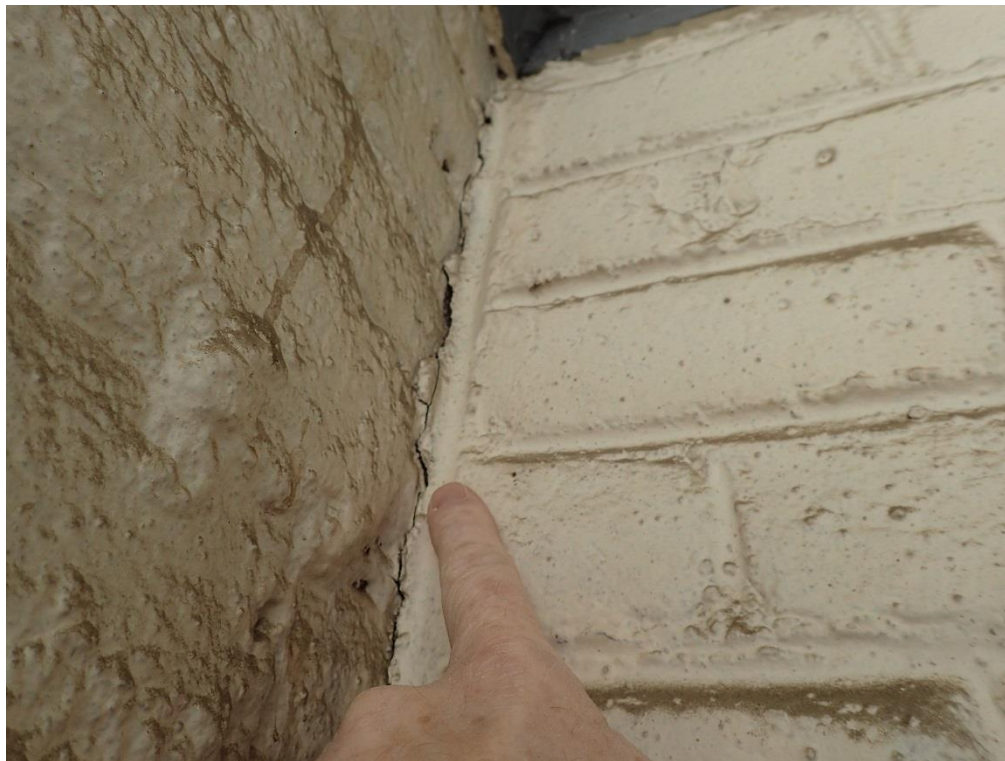


Figure 10: Vertical cracking between façade and perpendicular wall

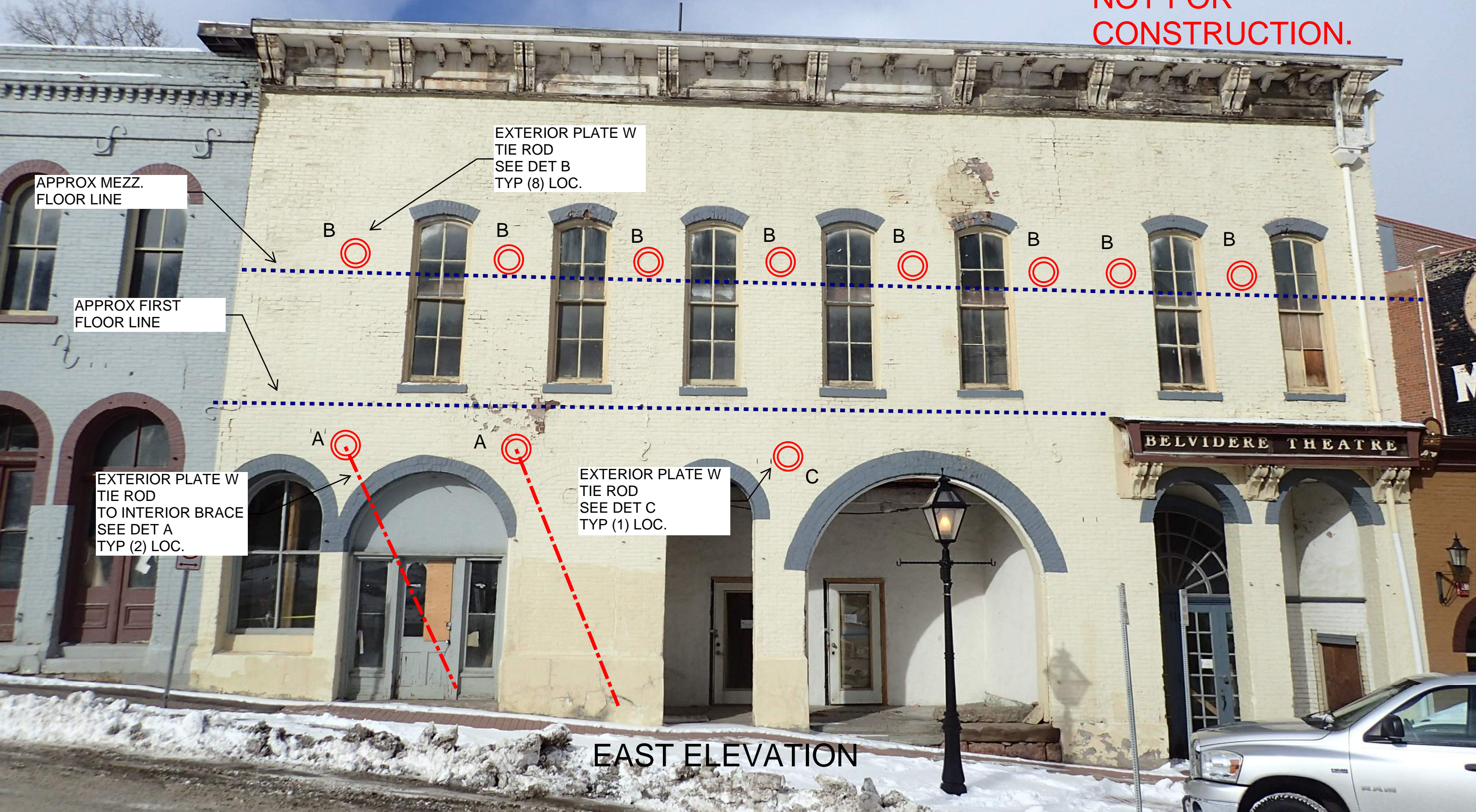


Figure 11: Vertical cracking between façade and perpendicular wall



Belvidere Theatre  
JVA # 17871  
4 Jan 2016  
By: LMG

CONCEPTUAL  
BRACING FOR  
PRICING ONLY.  
NOT FOR  
CONSTRUCTION.



APPROX MEZZ.  
FLOOR LINE

EXTERIOR PLATE W  
TIE ROD  
SEE DET B  
TYP (8) LOC.

B

B

B

B

B

B

B

B

APPROX FIRST  
FLOOR LINE

EXTERIOR PLATE W  
TIE ROD  
TO INTERIOR BRACE  
SEE DET A  
TYP (2) LOC.

A

A

EXTERIOR PLATE W  
TIE ROD  
SEE DET C  
TYP (1) LOC.

C

BELVIDERE THEATRE

EAST ELEVATION





BRACE LOCATION  
REF. DETAIL A

CONCEPTUAL  
BRACING FOR  
PRICING ONLY.  
NOT FOR  
CONSTRUCTION.

DETAIL A - APPROXIMATE LOCATIONS



PL1/2" x 12" x 12"  
w tie rod  
to anchor plate  
on exterior face  
of wall

CONCEPTUAL  
BRACING FOR  
PRICING ONLY.  
NOT FOR  
CONSTRUCTION.

20kip adjustable  
post shore

Base PL1/2" x  
12" x 12"  
w (4) 5/8" dia.  
epoxy anchor  
bolts

DETAIL A - 2 LOCATIONS



CONCEPTUAL  
BRACING FOR  
PRICING ONLY.  
NOT FOR  
CONSTRUCTION.

(E) Floor Joists

Install Simpson LTTi31  
nailed to floor joists  
w/ 5/8" dia. tie rod  
to anchor plate on  
exterior face of wall.

Typical every brick pier  
(8) locations

DETAIL B





New Decorative  
Anchor Plate

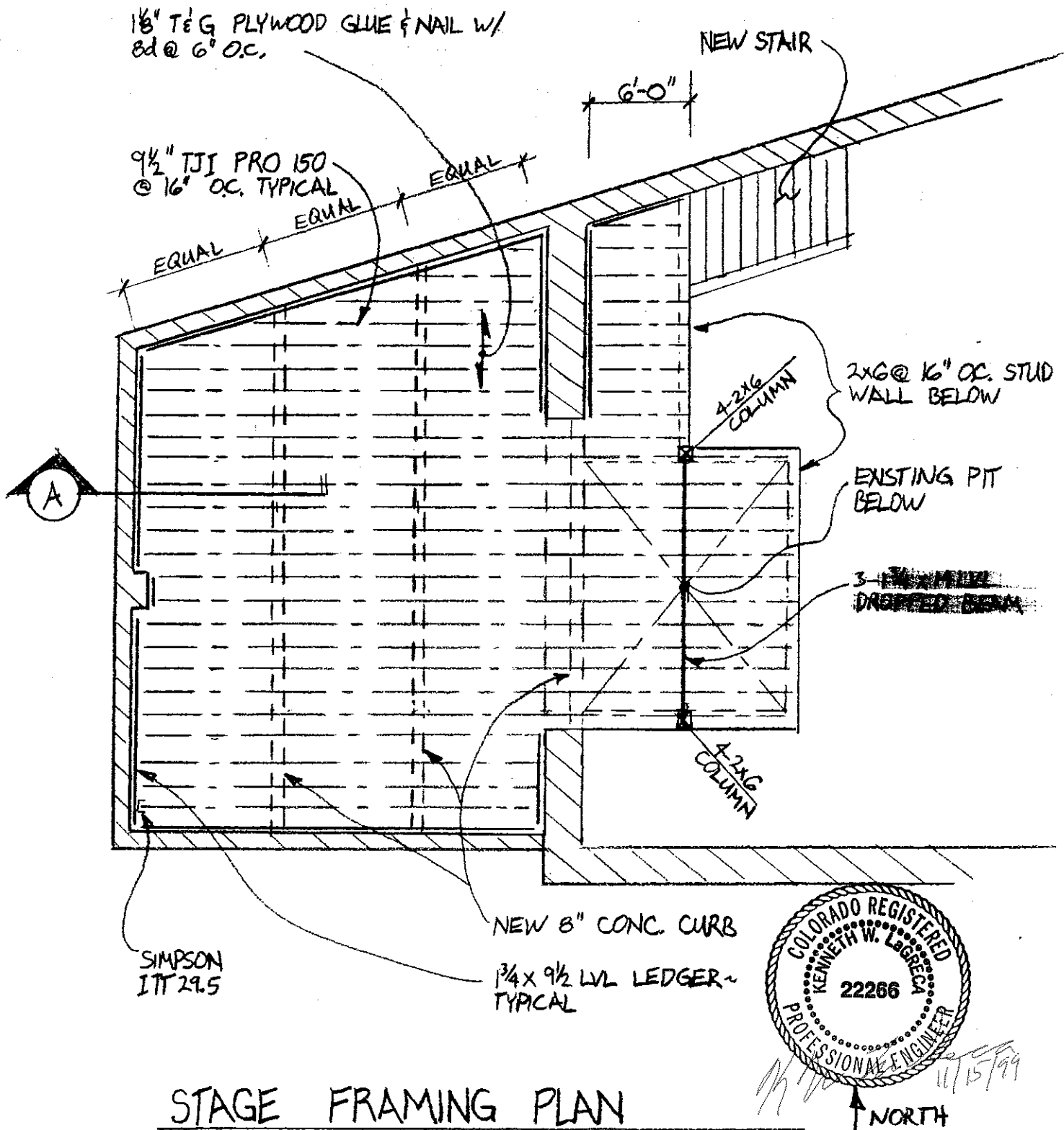
Simpson LT  
w/ 5/8" Dia. Tie Rod  
to Anchor Plate

(N) 3/4" CDX Plywood  
Sheathing fastened  
to underside (E) joists

CONCEPTUAL BRACING  
FOR PRICING ONLY.  
NOT FOR CONSTRUCTION.

DETAIL C





## STAGE FRAMING PLAN

Mountain  
Design  
Group



Architecture  
Structural Engineering

Project

BELVIDERE THEATER

Client

By KL

Date 11/14/99



